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ADDRESSES AND ORIGINAL ARTICLES

LATE RESULTS IN THE OPERATIVE TREATMENT OF INTRACRANIAL TUMOURS *

BY HUGH CAIRNS, M.B. Adelaide, F.R.C.S. Eng.
SURGEON IN CHARGE OF THE DEPARTMENT OF NEURO-SURGERY, LONDON HOSPITAL

DURING the year September, 1926, to September, 1927, it was my privilege to act as assistant resident surgeon in the clinic of Dr. Harvey Cushing at the Peter Bent Brigham Hospital, Boston, and to make a report on the immediate results of the year's work to the Medical Research Council.[1] The present report is concerned with the ultimate fate of 135 patients with verified intracranial tumours who left hospital alive after having been treated during 1926–27 by a major intracranial operation (Tables I. and II.).

TABLE I

Verified Intracranial Tumours Treated by Operation During 1926–27

Tumours partly or wholly removed at operation in 1926–27	148
Tumours first verified at necropsy	5
Tumours not surgically disclosed but found and verified at secondary operation in later years	4
	157
Died in hospital during 1926–27	22
Survivors of 1926–27 series	135

TABLE II.*—*Intracranial Tumours*, 1926–27

Survival Periods of 157 *Cases in Accordance with Pathological Type*

Type.	Died in hospital.	Died subsequently.	Still living 7–9 years after operation.	Total.
Glioma	11	40	8	59
Pituitary adenoma	1	9	19	29
Meningioma	5	8	18	31
Neurinoma (acoustic)	1	1	8	10
Craniopharyngioma	2	2	1	5
Cholesteatoma	—	—	2	2
Blood-vessel tumour	1	—	3	4
Metastatic tumour	1	7	—	8
Granuloma	—	2	1	3
Miscellaneous	—	3	3	6
Total	22	72	63	157

* For various reasons these figures are not identical with those given in Table VI. of the report to the Medical Research Council.[1] Thus, 61 gliomas were cited in the original report, whereas now there are only 59. Two of the original cases have since been reclassified, after further operation, one as a sarcoma, another as a meningioma.

Contact has been maintained with every one of these 135 patients during the years between 1927 and 1935; of those who died the time and manner of death is in most cases known; with those who are alive regular correspondence has been exchanged and many have been examined from time to time. This follow-up work is done by Dr. Louise Eisenhardt, formerly of the Peter Bent Brigham Hospital and now in charge of the Brain Tumour Registry at New Haven, where records of Dr. Cushing's 2000 and more verified brain tumour cases [2] are kept. The fact that not one of these 135 patients has been lost sight of indicates the thoroughness of the system. Without Dr. Eisenhardt's work the present study could not have been undertaken. When I revisited the United States in the autumn of 1935 she kindly collected the necessary material for me, with the help of Miss M. Stanton. Through the kind interest of Dr. Cushing I was able to examine personally many of the survivors of the series.

The primary aim of such an investigation as this is to estimate the lasting value of surgical treatment of intracranial tumours. Table II. shows the survival-rates of the patients operated on in 1926–27. Of 135 patients discharged from hospital 63 were alive when last heard from seven to nine years later. With intracranial tumours a survival table tells us little. This one supports in a general way the impression that about half of all intracranial tumours coming to operation are benign and the other half malignant, but it does not indicate the value of treatment; for a patient may live indefinitely after removal of an intracranial tumour and yet be so maimed that his life is a burden to his relatives and to himself. What we need to know is the period of useful life of a patient after operation.

To assess the value of surgical treatment it is obviously necessary to consider each pathological type of tumour separately. Not only does the life-history of intracranial tumours vary as between one type and another, but in some instances the criteria by which results can be judged also differ. For example, some patients are operated upon to relieve loss of sight rather than to save life, and in these the results of treatment must be judged by the condition of their eyesight and not by longevity.

Table III. gives a detailed analysis of the late results according to pathological type. In this and the succeeding table the duration of life after operation is given in years. A certain number of patients have had more than one intracranial operation and the duration of life is calculated from the time when the tumour was first removed. For example, a patient was operated on during 1926–27 for recurrent meningioma, the first operation having been performed in 1919; this patient died in 1932 and the duration of life was thus 13 years. In the last column of Tables III. and IV. is recorded the longest post-operative survival period so far achieved among the 2000 tumour cases of the collection for each type of tumour. These compensate in some measure for possible errors of judgment, due either to the small number of cases observed in one year, or to the fact that only 8–9 years have elapsed since operation.†

GLIOMAS

The course of the gliomas in this series is shown in Table IV.

Glioblastoma multiforme.—This is typically a rapidly growing tumour of the white matter of the cerebral hemisphere of middle-aged and elderly people. It is an invasive tumour and usually contains areas of necrosis and hæmorrhage. At times it contains one or more cysts. The illness runs as a rule a fairly rapid course, measurable in weeks or months. At operation the tumour may appear to be sharply defined from the surrounding softened white matter, but, even after an apparently complete removal, in

* The full report is being published in the Yale Journal of Biology and Medicine, May, 1936.

† These figures have kindly been supplied by Dr. Eisenhardt from an unpublished paper presented before the Association for Research in Nervous and Mental Disease, Dec. 28th, 1935.

TABLE III.—INTRACRANIAL TUMOURS, 1926–27

Duration of Life in Years Calculated from the Time when the Tumour was First Removed

Type.	Total.	Dead.											Still living 7 or more years after operation.	Useful life.	Longest post-op. survival recorded in Registry.
		Post-op.	0–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10	10–14			
Glioma	59	11	11	18	3	1	2	2	..	1	1	1	..	8	5	26+
Pituitary adenoma	29	1	..	..	2	..	3	..	1	1	1	1	..	19	10	24+
Meningioma	31	5	..	..	..	1	3	2	..	..	..	..	2	18	14	25+
Neurinoma	10	1	..	..	..	1	..	..	..	..	..	..	..	8	2	25+
Craniopharyngioma	5	2	..	1	..	..	1	..	..	..	..	..	..	1	..	20
Cholesteatoma	2	..	..	..	..	..	..	..	..	..	..	..	..	2	2	16+
Blood-vessel tumour	4	1	..	..	..	..	..	..	..	..	..	..	..	3	1	22
Metastatic tumour	8	1	5	..	2	..	..	..	..	..	..	..	..	..	..	5
Granuloma	3	..	1	..	1	..	..	..	..	..	..	..	..	1	1	15+
Miscellaneous	6	..	3	..	..	..	..	..	..	..	..	..	..	3	2	..
Total	157	22	20	19	8	3	9	4	1	2	2	2	2	63	37	..
Percentage of total number of cases	..	14·0	12·7	12·1	5·1	1·9	5·7	2·5	0·6	1·2	1·2	1·2	1·2	40·1	..	..

most cases it quickly recurs. Radiation in various forms usually fails to prevent recurrence.

In this series there were 8 cases of glioblastoma multiforme. In 6 cases removal of tumour at operation appeared to be complete, in the other two partial. In one patient a second operation was done and the tumour was again removed, 4 months after the first operation; the patient died 5 months later. In all cases the tumour recurred after a brief interval and every one of the patients soon died. The shortest survival period from the time of operation was 2½ months, the longest 14 months, the average about 6½ months. The longest period of freedom from symptoms after operation was 2 months.

Cerebellar Medulloblastoma.[1 7]—This is another very unfavourable type of glioma. Arising usually in the vermis of children and young adults it grows rapidly and quickly produces hydrocephalus. The diagnosis of cerebellar tumour rarely presents difficulty. At operation the tumour can be shelled out apparently completely, but soon, usually within a year, there is recurrence. Metastases occur in the cerebral and spinal subarachnoid spaces and in the ventricles.[4] X rays or radium produce prompt amelioration of symptoms, for the tumour is at first very sensitive to radiation, more so than any other form of intracranial tumour. But as times goes on radiation ceases to give relief and the patient dies.

In this series there were 5 cases of cerebellar medulloblastoma. All died at intervals of 2 to 19 months after operation. The average survival period was 13 months. In van Wagenen's series of 17 cases it was 14·5 months. When Cushing [7] reported the medulloblastomas in Lund, only 3 of the 61 cases he had treated up to that time were still alive.

Though the survival period is short the proportion of it that may be regarded as useful life is usually high. The patients recover quickly and completely from operation provided hydrocephalus has been relieved, and with regular courses of X ray treatment are able to get about with every appearance of normality and happiness for about a year. The period of final illness is usually mercifully short, though not invariably so, for sometimes incapacitating symptoms arise from spinal metastasis when there is no clinical evidence of recurrence within the cranium.‡ But in the majority of cases, short as the respite is, the parents of the patient seem so grateful for this extra time that it is impossible to conclude that surgery is not worth while in this variety of tumour. And that is just as well, for it is practically impossible to distinguish clinically between this tumour and the benign astrocytoma (q.v.) that occurs in the same situation.

Cerebral Medulloblastoma.—Occasionally medulloblastoma has been described as occurring in the cerebral hemisphere, but with far less frequency than in the cerebellum. Moreover, cerebral medulloblastomas do not appear to have the same life-history

‡ Hence the importance after operation of prophylactic radiation of the spinal canal.

TABLE IV.—GLIOMAS, 1926–27

Duration of Life in Years Calculated from the Time when the Tumour was First Removed

Type.	Total.	Dead.										Still living 7–9 years after operation.	Longest post-op. survival recorded in Registry.
		0–1	1–2	2–3	3–4	4–5	5–6	6–7	7–8	8–9	9–10		
Glioblastoma multiforme	8	6	2	..	..	..	..	..	..	..	..	..	4+
Medulloblastoma—													
Cerebellar	5	2	3	..	..	..	..	..	..	..	..	..	7+
Cerebral	2	..	..	..	1	1	..	..	..	..	..	..	5
Oligodendroglioma	2	..	1	..	..	..	..	..	..	1	..	..	13
Astroblastoma	4	1	1	..	..	..	1	..	..	..	..	1	12+
Ependymoblastoma	1	..	1	..	..	..	..	..	..	..	..	..	10+
Spongioblastoma polare	1	..	..	..	..	..	..	..	..	..	..	1	15+
Papilloma	1	..	..	..	..	..	..	..	..	..	..	1	8+
Astrocytoma—													
Cerebellar	4	..	1	..	..	..	..	..	..	..	..	3	26+
Cerebral	15	1	7	3	..	1	..	..	1	..	1	1	21+
Unclassified	5	1	2	..	..	..	1	..	..	..	..	1	..
Total	48	11	18	3	1	2	2	..	1	1	1	8	..

as cerebellar medulloblastoma, nor, as a rule, the same radio-sensitivity. There were two gliomas of the cerebral hemisphere in this series that were classified as medulloblastomas, but this interpretation of the histological picture is not free from possibility of error, and, moreover, the group is too small to justify conclusions. One patient died 5 months after operation without improvement. The other patient survived nearly 5 years.

Cerebellar Astrocytoma.[8]—This proves to be one of the most satisfactory intracranial tumours to deal with surgically. Composed of fully differentiated astrocytes, it occurs chiefly in young adults and children in the vermis and lateral lobes of the cerebellum and appears to be almost invariably quite circumscribed and benign. If all the tumour tissue visible to the naked eye is removed at an operation in which the lesion is adequately exposed, the tumour does not as a rule recur, though in this connexion it must be noted that symptoms of recurrence after incomplete operations may be delayed for as long as eleven years, and perhaps longer.

In this series there were 4 young female patients with cerebellar astrocytomas. In one case only part of the tumour was removed, and the patient died after a second attempt to remove the tumour fourteen months later. In the other cases the tumour was completely removed during 1926–27 and all three patients were well, in full work, and free from symptoms when last heard from seven to nine years after operation, with the exception that one complained of occasional headaches and tremor of the left hand and foot. This patient and another had married since operation, and each had borne two healthy children. The third was seen recently by me and was free from symptoms.

Cerebral Astrocytoma.—Astrocytoma of the cerebral hemisphere differs from the cerebellar astrocytoma in being less sharply defined and not wholly composed of astrocytes, but often containing an admixture of oligodendroglia and other cells. Furthermore, the astrocytes are often immature and some tumours show mitotic figures. These tumours are often difficult to remove completely, and sometimes they infiltrate the brain to such a remarkable degree that complete removal, short of removing the cerebral hemisphere, is impossible. Recurrence after apparently complete removal of the tumour is common, whereas in cerebellar astrocytoma it is rare.

In this series there were 15 cerebral astrocytomas, a remarkably large number. The survival periods are shown in Table IV. and it can be seen that the majority (all except 4) died within three years. Of the 15 patients 8 had a second operation for recurrence of tumour. The average survival period for the whole group was 37·0 months.

Of the patients who survived operation for more than three years one, a young man with a cystic left temporal astrocytoma (Cushing,[6] Case 9), lived nine years from the time of his first operation, being free from symptoms and doing active farm work for six of those years. Another, a man with a cystic right parietal astrocytoma (Cairns,[3] Case 8), blind from secondary optic atrophy before his first operation, was still alive when last heard from seven and a half years after operation. Another, a woman with a large solid left occipital astrocytoma (Cairns,[3] Case 9; Horrax and Putman,[13] Case 6), subtotally removed, was free from symptoms of recurrence of tumour for nearly seven years after operation, but died six months after a further operation for recurrence.

There is little doubt that there is considerable variation in the rate of growth of individual astrocytomas. Whether this can be explained on a histological basis has not yet been established. With the improvements in diagnosis and operative technique which have been taking place in more recent years it is reasonable to expect that in the future permanent cures of some of the more benign cerebral astrocytomas will be obtained.

Oligodendroglioma.—This tumour also appears to vary considerably from case to case in its rate of growth and method of spread. There were only two cases discharged from hospital alive in this 1926–27 series. In one, death occurred suddenly one year and nine months after removal of the tumour, from what was thought to be cerebral hæmorrhage. The other patient lived for nearly nine years from the time of his operation, and during that time had three further operations for removal of recurrent tumour. He was able to conduct his business satisfactorily for about six of these years, but the benefit of removal of tumour became less with each succeeding operation.

Astroblastoma.—In this tumour there appears to be considerable variation in the rate of growth. Of the 4 patients in this series from whom tumours of this type were removed one lived three months and another thirteen months; the third had previously had a tumour removed in May, 1926, and a recurrent tumour was removed six months later; after that she lived for over four years.

The fourth case is one of the most satisfactory cases in the whole series, and the result of operation is one that would not have been predicted when the patient was in hospital. The patient, a middle-aged woman, had suffered for five months from profound and progressive mental disturbance followed by severe frontal headache. At operation a cystic and solid tumour was removed from the right frontal lobe (Cairns,[3] Case 31). Apart from one convulsive seizure one year after operation she had remained in perfect health up to the time when she was last seen nine years after operation. It is necessary to add that the histological interpretation of this tumour has been difficult. Dr. Eisenhardt's opinion after further study in 1935 was that it was an astroblastoma. Whatever the exact nature of the tumour may be, the clinical picture before operation suggested that it was a tumour of rapid growth and one that might not respond favourably to surgical treatment.

PITUITARY ADENOMA

During the year 1926–27 29 patients were operated on for pituitary adenoma (Table V.). At that time it was customary in the clinic to treat pituitary adenomas by the trans-sphenoidal operation unless there was difficulty in excluding some suprasellar tumour, such as suprasellar meningioma or craniopharyngioma. Since 1927 the transfrontal approach has been the more routine procedure. A number of

TABLE V.—*Pituitary Adenomas*

Total		29
Chromophil adenomas	5	
Chromophobe "	24	29
Trans-sphenoidal operation*	27	
Transfrontal " *	2	29
Died in hospital	1	
Died some years later	9	
Living 7–9 years after operation	19	29

* As the initial or only operative procedure.

patients operated on by the trans-sphenoidal route during 1926–27 have since undergone a second operation by the transfrontal route.

Nine patients have died since leaving hospital, from intracranial or nasopharyngeal extensions of tumours, from intercurrent disease, and in two cases from coma for which no satisfactory cause was found at necropsy. In these cases there was no ketosis. The working ability of the 19 survivors is shown in Table VI.

TABLE VI.—*Pituitary Adenoma*

Working Ability of 19 *Survivors*

No information.	Full work.	Intermittent work.	No work.
3	11	1	4 { Mental symptoms 2 Blindness 1 Headache 1

Some of the patients who were in full work when last heard from had previously suffered from periods of ill-health since the time of operation. Many still have disturbance of reproductive function. Mental symptoms have appeared in two patients, probably as a result of intracranial extension of the tumour. Attacks of unconsciousness as isolated incidents have appeared in four patients. Periods of weakness and extreme drowsiness lasting a week or more have marked the course of several patients both with chromophil and chromophobe adenomas. One patient has had an attack of vertigo. Bouts of headache, sometimes accompanied by diplopia, have occurred in some cases. Constipation, gastric disturbance, excessive appetite, and obesity are other symptoms mentioned. It seems likely that operation in its present form does not stay the course of the endocrine manifestations, even though it may diminish their rate of progress to some extent.

Of the 19 survivors 12 had good sight (6/12 or better in both or one eye) seven to nine years after operation; 6 had severe loss of vision; and the condition of sight of the other was unknown. Of the 9 fatal cases 5 had good vision at the time of their death and 4 were almost or quite blind. Critical judgment of the value of operation in preserving vision is a difficult matter. So far as I am aware there is no good series of control cases in existence, yet it is known that, while the general tendency is one of progressive hemianopia and reduction of visual acuity, there are nevertheless cases in which chromophil adenoma, and probably also chromophobe adenoma, exist for many years without producing more than a slight degree of bitemporal hemianopia, and other cases in which the fields and visual acuity may improve spontaneously after a fairly advanced stage of defect has been reached. In this series, also, it is not easy to test the relative merits of different forms of treatment. X ray treatment was given at one time or another to most of the patients, but it is difficult to draw any conclusions as to its value, because of its close but variable relation to operation, and the lack of any immediate dramatic effect.

The series does give, however, some important and unexpected information about the results of the trans-sphenoidal operation. Improvement of vision after this operation has been usually delayed and gradual, and the condition of sight at the time when the patient was discharged from hospital gives no true indication of what the ultimate result will be.

Thus, a man aged 39, a sleepy apathetic rather obese individual with a large chromophobe adenoma, who had been virtually blind for four months (3/200 in the right eye and no P.L. in the left), ultimately improved after trans-sphenoidal operation to a surprising degree. At the time of discharge from hospital there was little improvement, but eighteen months later he could see enough to walk about by himself; three years after operation he could see well enough to resume his work as manager of a shop, and during the next five years, up to the time when I last saw him, he had not lost a day at work. Nine years after operation his vision was 20/30 in the right eye and the other eye was blind. Although he was free from symptoms there was clinical and radiological evidence of a large tumour at the base of the skull.

While the transfrontal operation is now the method of choice in most cases, yet in cases of extreme visual loss with a large intrasellar tumour it is probable that better results may sometimes be achieved by the trans-sphenoidal operation.

MENINGIOMAS

The meningioma or dural endothelioma is a tumour that is attached usually to the dura and grows slowly, embedding itself in the brain in the process, but so gradually that the tumour frequently attains a large size before it produces serious symptoms. These tumours are often extremely vascular and consequently difficult to remove. But they are usually quite circumscribed, and have been considered to give the most favourable outcome of any intracranial tumour in cases where the patient has survived complete removal.

Of the 31 patients with meningiomas 5 died after operation. Of the 26 survivors 8 have since died at varying intervals, all from recurrence of tumour (Table III.). In 6 of these cases the tumour was known to have been only partly removed at operation, but in the other 2 removal of the tumour had apparently been complete. These last 2 were cases of recurrent meningioma in which the first removal of tumour had been undertaken some years previously, when there was still no clear understanding the prime importance of removing all bone and dura in the slightest degree suspect through invasion of tumour cells. Another patient, operated on for the first time in 1926 for removal of a large bilateral sagittal meningioma with a large overlying neoplastic hyperostosis, was left at the conclusion of operation with a small fragment of tumour tissue in the superior longitudinal sinus. Symptoms of recurrence of tumour appeared about a year later and were ultimately fatal. Recurrence is not unknown up to seventeen years after the removal of a meningioma.

From seven to nine years after operation 18 patients were alive and well. Of these, 8 were completely well or suffering only from minor symptoms, and were at work. A further 6 were at work but had major symptoms; 3 of them suffered from visual loss which had been present before operation; 1 had slight mental symptoms which had been present before operation; and 2 had occasional fits. The remaining 4 patients were living but unable to work, 2 because of the presence of an actively growing tumour which was irremovable, 1 because of blindness that was present before the tumour was removed, and 1 because of mental symptoms which were present before operation.

The frequency of post-operative epilepsy after removal of supratentorial tumours is probably much higher than has hitherto been realised. In 8 of the 14 supratentorial meningiomas of this series occasional epileptic manifestations persisted after the

tumour was wholly or subtotally removed. Often they were of minor character and infrequent, and in none did they prevent the patient from working. But cases may arise in which post-operative epilepsy greatly mars what would otherwise be a very satisfactory surgical result, and these present a problem of treatment that still awaits solution.

Although it has long been known that a meningioma may invade the overlying bone, and although malignant meningiomas have been encountered by most neurosurgeons and reported by a few, this tumour has usually been regarded as the most benign of intracranial tumours. Certain cases in this series provide excellent late results of removal, but a study of the series as a whole provokes the question whether the results are ever likely to be so uniformly good as the late results of removal of cerebellar astrocytomas and hæmangiomas, and there is evidently still much to be done in perfecting the operative treatment of meningiomas. The treatment here discussed is, of course, that given during 1926–27, and since that time advances in technique have already been made, perhaps more for meningiomas than for any other variety of tumour.

ACOUSTIC NEURINOMAS

During 1926–27 10 cases of acoustic neurinoma were operated on by the method of intracapsular extirpation, the greater part of the capsule with a shell of tumour tissue being left in place (Table III.).

Dead (2).—One patient died in hospital soon after operation, and another died three years after operation from what was probably bronchiectasis following chronic dysphagia.

Living (8).—When last heard from seven to nine years after operation three were unable to work and were completely or severely incapacitated by ataxia. One had severe disturbance of gait, but there was no information about his working capacity. One had suffered from severe unsteadiness after operation, and then returned to work for about three years, and had later become ill again with high blood pressure, gastric ulcer, and recurrence of his original symptoms. One was able to do light work.

Two were in full work. One of these was handicapped by greatly reduced vision which had been present before operation. The other patient when seen eight years after operation was found to be in practically normal health. She said that for about a year after operation she had suffered from severe disability of the arm and leg corresponding to the side of the tumour, and that she had not been able to resume a normal life until two years after the operation. It is probable that the story of prolonged post-operative disability given by this patient is by no means unusual.

The symptoms of acoustic tumour before operation, as is well known, can be grouped for the most part in three categories: those due (1) to rise of intracranial pressure; (2) to cranial nerve palsies; (3) to impaired coördination of movement. After operation, though there is an occasional case in which an internal hydrocephalus is merely converted into an external hydrocephalus, rise of intracranial pressure is usually relieved and blindness prevented; and the residual disability is mainly one of disturbed coördination. With incomplete operations disturbance of balance may be more pronounced than it was before. Even with complete removal of the tumour it may persist for a year or more after operation.

A study of the 1926–27 cases shows the serious nature of the problem. Of 8 patients, 6 were left with severe disturbances of balance, lasting through a period of years after operation. Further attempts have been made to improve 5 of them by secondary operations with removal of more tumour, and 2 of them have each had two secondary operations. None of these patients has been seen and fully examined recently, and the amount of improvement that has resulted cannot therefore be accurately gauged; but from letters and reports it is doubtful whether the improvement has been great. In none of the secondary operations was the tumour completely removed.

Increasing experience may show that in some cases it is easier to remove the tumour completely at a second operation after an interval than it was at the first. The tumour may not then be so vascular and the formation of cystic collections of fluid may facilitate its removal. Dissatisfaction with the results of previous intracapsular operations led Cushing [9] in 1928 to introduce a more radical exposure, obtained by removing the lateral cerebellar lobe overlying the tumour. Since that time much more radical operations have been done, and it is likely that the late results of 1929 would prove better than those of the year at present under consideration.

Another way of attacking the problem advocated by Dandy [11] and by Olivecrona [18] is to remove the tumour completely. With increasing experience there is no doubt that most neurosurgeons are tending to do more and more radical operations of this nature, but the mortality is likely to be high if this method is applied indiscriminately. So much depends on the consistence and vascularity of the tumour, on the firmness of its adherence to the side of the pons and restiform body, on the condition of the patient, and on the ease with which the early stages of the operation are accomplished. Probably there will always be some cases in which it is necessary to do two-stage operations. The problem is worthy of the most earnest and sustained attention because the tumour is quite benign.

CHOLESTEATOMA

There were 2 patients in this group, one with a tumour of the anterior and middle fossæ not in any way connected with middle-ear disease, and the other with a tumour in the cerebellopontine angle. Both these patients were well seven years after operation although in neither case had removal of the tumour capsule been complete. The evidence of these cases, so far as it goes, suggests that it is unnecessary to remove the capsule of a cholesteatoma.

BLOOD-VESSEL TUMOURS

One of the most favourable varieties of intracranial tumour is the hæmangeioblastoma of the cerebellum, if it can be completely removed, but that fact is not shown by this series of cases, though it is well established by previous report.[10] In 1926–27 one patient died after complete removal of a cerebellar hæmangeioblastoma. In another it was found at operation that the tumour could not be removed. This patient was still alive seven years after the decompression operation, but was seriously incapacitated by ataxia of all four limbs.

There were 2 cases of arterio-venous angeioma of the cerebral hemisphere, and both patients were alive eight years after operation. In one the result was poor, for the patient suffered from right hemiparesis and aphasia and frequent focal fits. In the other the result was satisfactory. This case provides fairly good evidence of the value of X ray treatment in arteriovenous angeioma.

GRANULOMAS

One patient with a left frontal parasagittal granuloma, thought to be a gumma, died two years and nine months after operation of prostatic abscess, pelvic cellulitis, and peritonitis. One patient with a cerebellar tuberculoma, partly removed on the supposition that it was a meningioma, died four months after operation, death being preceded by progressive cranial nerve palsies and other symptoms of posterior fossa disturbance. Another patient from whom a left temporal tuberculoma had been removed was alive at the time of this report, but suffered severely from epilepsy. For more extensive information about the late results of surgical treatment of tuberculomas the reader is referred to the paper of van Wagenen [22] though it is probable that further experience will be less unfavourable than his.

METASTATIC TUMOURS

Of the patients with metastatic tumours 1 died in hospital and 7 were discharged alive (Table III.). Of these, 5 died within five months of operation, but the other 2 lived more than two years. One of them had respite from hemiplegia for six months after operation, but then for a long time before death lived a vegetative existence. The other had fifteen months of useful work as a tramdriver between his operation and his death. This patient had a large right parietal metastatic carcinoma from an unknown source, involving pericranium, bone and dura, and projecting into the cranial cavity like a meningioma. Clinically there had been a lump on the head and before operation meningioma had been suspected.

A much larger series of metastatic tumours from this clinic, studied by Meagher and Eisenhardt [16] showed that the patients survived cranial operations for an average of only six weeks, but Oldberg [17] has reported two remarkable cases in which there was freedom from intracranial symptoms for two years after the cerebral tumour was removed.

MISCELLANEOUS TUMOURS

Two patients with tumours of the skull, one a myeloma and the other a sarcoma, died about two months after operation. One patient with a fibrosarcoma in the right temporal lobe died one year after operation. The other 4 patients in this group were living seven or more years after operation. Their respective lesions had been a hydatid cyst of the right parietal lobe, a simple cyst of the cerebellum, and an osteoma of the orbit. The first patient suffered from acute alcoholism and epilepsy, and the other two were quite free from symptoms.

BIBLIOGRAPHY

1. Bailey, P., and Cushing, H.: Arch. Neurol. and Psychiat., 1925, xiv., 192.
2. Bramwell, B.: In Allbutt and Rolleston's System of Medicine, 2nd ed., London, 1910, vol. viii., p. 284.
3. Cairns, H.: A Study of Intracranial Surgery, Med. Research Council, Spec. Rep. Ser. No. 125, London, 1929.
4. Cairns, H., and Russell, D.: Brain, 1931, liv., 377.
5. Cushing, H.: Amer. Jour. Dis. Child., 1927, xxxiii., 551.
6. Cushing, H.: Surg., Gyn., and Obst., 1928, xlvii., 751.
7. Cushing, H.: Acta Path. et Microbiol. Scand., 1930, vii., 1.
8. Cushing, H.: Surg., Gyn., and Obst., 1931, lii., 129.
9. Cushing, H.: Intracranial Tumors. Notes upon a series of 2000 verified cases with surgical-mortality percentages pertaining thereto, Springfield, Ill., 1932.
10. Cushing, H., and Bailey, P.: Tumors Arising from the Blood-vessels of the Brain: Angiomatous Malformations and Hemangioblastomas, Springfield, Ill., 1928.
11. Dandy, W.: Bull. Johns Hopkins Hosp., 1922, xxxiii., 344.

(To be concluded)

IRISH HOSPITALS SWEEPSTAKES.—The draw for the eighteenth in the series of sweepstakes in aid of the Irish hospitals was held in Dublin on May 22nd and 24th. It was reported that the receipts on the present draw showed an advance of nearly £50,000 on those on the last sweepstake on the Derby, although the interval for preparation had been eleven days less. The sum that will be devoted to the hospitals from the present sweepstake is £377,973. The total amount collected for the hospitals in the eighteen sweepstakes beginning in November, 1930, is £9,618,186.

THE DIAGNOSIS OF CARCINOMA OF THE CERVIX IN A VERY EARLY STAGE*

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WHEN 12 years ago the question of how to improve the carcinoma statistics was discussed in the laboratory of the Vienna II. Frauenklinik I made up my mind to try to do it by systematic work. I saw three ways: (1) to improve the operative methods; (2) to improve the radiotherapy; (3) to find a method of early diagnosis.

An improvement of the operative technique hardly seemed possible, both radical operations—Wertheim's abdominal and Schauta's vaginal—being the best that operative technique can achieve. The small modifications of these methods occasionally indicated do not change the results. Improvement in X ray or radium therapy is not possible with ordinary apparatus, which to-day is at its maximum efficiency. An improvement of radiotherapy might be obtained only by applying stronger or more efficient rays. There therefore remains, per exclusionem, only the third way—the improvement of early diagnosis.

The Pathology of Early Cancer

The first question I put to myself was: What do the early, the earliest, stages of a cancer of the cervix look like? They need not necessarily look like a miniature reproduction or a small piece of the fully developed carcinoma. The present definition of cancer is not exact; it has developed in the course of centuries into a complex idea and has not been deduced from predefined concepts. The idea of cancer that has become classical concerns the histology both of the individual cells and of the groups of cells in the tumour tissue; neither is sharply defined, but merely empirical. The cellular characteristics are polymorphism and non-conformity of type; the many attempts, however, of latter years to measure or count the nuclei by statistical methods were for practical purposes all failures. The distinguishing feature of the tumour tissue, invasive growth, is generally considered the main characteristic of malignancy. The question arises whether the youngest and earliest stages of cancer are also definitely polymorphous and atypical, as well as invasive. In other words it is a question whether a cancer shows in its earliest stages all the characteristics of the advanced stages; this may be, but is not necessarily so.

Does cancer in its earliest stages—i.e., from the beginning—show all the three qualities on which we usually base our diagnosis of a progressed cancer? Are its cells atypical, polymorphous, and is it invasive? Of these the last is of great diagnostic importance, for to the pathologist whether the cells are polymorphous and atypical is a matter of individual judgment, while invasion can easily be demonstrated.

One of the most interesting and valuable observations was made by Kermauner concerning the border-zone between normal and carcinomatous tissue.

He examined most carefully a great number of solid cervical cancers of the uterus to study the way in which the normal tissue is demarcated from the carcinomatous.

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*Part of the Lloyd Roberts lecture delivered in Manchester on May 19th, 1936.

In the great majority (about 95 per cent.) there is a narrow zone between the carcinomatous and the normal epithelium, and in it there is a stroma covered neither by carcinomatous nor by normal epithelium, but which appears somewhat ulcerated owing to inflammatory erosion (Fig. 1 A). We call this the zone of demarcation. It forms a sort of neutral area between the carcinomatous and the normal tissue but is not occupied by either. This is the usual picture as it presents itself in the majority of cases. In the remainder (about 5 per cent.) there is a different kind of demarcation (Fig. 1 B). The carcinomatous and the normal epithelium are in a contiguity with a zone of epithelium between them that has about the same thickness as the normal epithelium with which it is in direct connexion but the cells are polymorphous and atypical, corresponding completely with those of the carcinoma on the other side. From the cytological point of view there is no difference between the carcinoma and the epithelial intermediate zone. The characteristics of the three zones according to their cytological and histological state are shown in Table I.

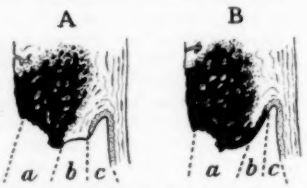

FIG. 1.—Carcinoma of the cervix. (A) 90–95 per cent. of cases. (B) 5–10 per cent. of cases (see Table I.). (*a*) Carcinomatous zone. (*b*) Intermediate zone. (*c*) Normal epithelium.

TABLE I.—*Marginal Zones of Cancer* (Fig. 1 B)

—	Polymorphous and atypical cells.	Down-growth.	Ulceration.
(*a*) Carcinoma ..	+	+	+
(*b*) Intermediate zone	+	−	−
(*c*) Normal epithelium	−	−	−

The question arises of how to classify the intermediate link. Is it carcinoma or normal tissue or is it a sort of transition stage? Kermauner without entering into discussion considered it carcinoma.

The Search for the Youngest Growths

I have attempted to find as early stages as possible in the following way. A really early cancer is one that has escaped diagnosis by the usual speculum examination. If a carcinoma is so big that it can be diagnosed clinically in the ordinary way special means are not required. The aim of my experiments was to work out a method that would enable us to detect such cancers as are lying beyond the limits of clinical visibility.

To state what a young carcinoma looks like it was necessary first of all to get young growths for histological examination. But I was looking for a carcinoma not visible or palpable by the usual methods; consequently it could not be discovered by an ordinary clinical examination. As such a method for finding early cancers had still to be worked out, there was only one possibility of getting young carcinomata for histological examination—namely, by chance. Such a chance would come about with mathematical certainty if enough uteri were examined for the condition of the cervix. To increase the probability I increased the number of examinations as much as possible—i.e., for several years I examined histologically the cervix of every uterus extirpated for whatever reason at our clinic. I examined under the microscope the cervix of every such uterus by several radial sections. There were cases of fibroids, chronic adnexial tumours, hyperplasia of the endometrium, adenomyosis, &c., the portio vaginalis of which seemed above suspicion. All of these I examined systematically. After having carried on these examinations for a number of years I found a series of cases which could be fitted into several groups, forming an uninterrupted series that began with the already known pictures and by gradual transition led to an as yet unknown early stage (Table II. and Fig. 2). The largest and best developed, Stage I., is in complete accord with Kermauner's findings. The next stage whose pathological area was correspondingly smaller again showed the three zones, but in the first zone of carcinoma there was no ulceration. The youngest stage (III.) showed no down-growth either; thus the zone of carcinoma and the superficial intermediate zone are alike. These three stages form a complete series with gradual transitions.

If in advanced cancer the superficial layer described by Kermauner and Schottländer is considered part of the carcinoma and consequently carcinoma itself then we are justified in considering the superficial layer of Stage I. as carcinoma. If this superficial layer is considered carcinoma then the superficial layer of Stage II. is carcinoma as well, because the secondary ulceration of the surface cannot establish the character of carcinoma. The last and perhaps the most difficult question to be settled is whether Stage III., which has only the superficial layer, is to be classed as carcinoma. In consideration of the logical development of our ideas we must go a step further. From the morphological and cytological point of view there is no difference whatever between the superficial layer of the margin area of extended carcinoma and the superficial layers that are found by themselves and isolated, which I described as Stage III. The character and pattern of the cells and the structure of the epithelium are identical, and having diagnosed the superficial layer of the margin as part of the carcinoma in spite of its not showing down-growth we are bound to consider the isolated layer as carcinoma. From our experience that down-growth is not one of the positive characters of carcinoma, and that the first stages of a carcinoma are characterised only by the cytological character not by the histological conditions—that is, by invasion—we come to a new conception of carcinoma, based

FIG. 2.—Carcinoma of cervix. The three early stages (see Table II.). (*a*) Carcinomatous zone. (*b*) Superficial intermediate zone. (*c*) Normal epithelium.

TABLE II

—	I.			II.			III.	
	a	*b*	*c*	*a*	*b*	*c*	*ab*	*c*
Polymorphous and atypical cells ..	+	+	−	+	+	−	+	−
Invasion	+	−	−	+	−	−	−	−
Ulceration	+	−	−	−	−	−	−	−

exclusively upon the cellular structure and not upon the histological localisation in general and the down-growth in particular.

According to the diagnosis given above, the development of a solid carcinoma of the squamous epithelium of the cervix is as follows :—

First a part of the epithelium of the surface, beginning at the external os, is changed into carcinoma—i.e., into a superficial layer analogous to the superficial layers of the marginal zones of advanced cancers. Next begins the invasive growth at the central part nearest to the external os, with plugs from the superficial layer penetrating into the depths. The last phase is the inflammatory breaking down of the surface by which the carcinoma ulcerates on the surface. This occurs rather late, so that a case with distinct ulceration may no longer be considered an incipient carcinoma.

The genuine early cancers consist of a superficial layer, first without and then with cones penetrating deeply. Therefore all early growths have a smooth surface, the superficial layer lying quite flush with the normal surface and showing no papillary growth, recesses, or ulceration. This is what makes it so difficult to diagnose the first stage of cancer, because the superficial layer is not distinguished either in colour or in form from the normal surrounding epithelium. I convinced myself of this by examining a large number of operation specimens. Only in isolated cases, which doubtless are the minority, the carcinomatous layer—i.e., the incipient cancer—shows certain differences that are revealed only by very exact observation.

These differences are :—

(1) The carcinomatous superficial layer is sometimes slightly higher than its surrounding—i.e., its margins are somewhat elevated from the surrounding epithelium. This difference of level is only a fraction of a millimetre and generally is only to be noticed by lateral inspection.

(2) The surface of the carcinomatous superficial layer is not smooth and shiny as the surface of the normal epithelium, but frequently dull and eventually wrinkled.

(3) While the normal squamous epithelium is transparent enough to allow the stroma and its vessels to shine through which gives it a reddish or blueish discoloration, the carcinomatous superficial layer is less transparent and thus appears to be of a brighter white and lighter in colour than the normal epithelium. The incipient carcinoma when clinically recognisable appears as leukoplakia.

How can the cancer not forming a leukoplakia be made clinically visible and how can it be made more easily visible when it is leukoplakic? The changes in a leukoplakia are not very conspicuous and easily apt to escape examination. My first efforts were in the direction of differentiating the normal epithelium from the carcinomatous by some vital staining. These experiences, which I tried with a great number of dyes, gave no useful results. But numerous histological examinations which I had carried out of beginning cancers and of carcinomatous layers showed a way which finally led to my goal. The normal squamous epithelium of the portio vaginalis shows in its superficial layers more or less flattened cell alveoli which consist only of thickened cell walls and eventually of shrunken, trabecular, dark nuclei. The inner part, normally occupied by the protoplasm, appears vacant in the slides, and only at the margins adherent to the thickened walls of the cells slight remnants of the shrunken protoplasm are eventually to be found. The usual stainings show these superficial cells as empty alveoli: if, however, such a slide is stained by Best's method the empty alveoli can be seen to contain great quantities of granular glycogen, which forms an inner coating of the walls of the cells. This glycogen is a physiological part of the vaginal and cervical epithelium which under normal conditions is never missing.

By comparative histological examinations we may prove that stratified epithelium nearly always contains glycogen in its superficial layers, as long as it does not get keratinised; for example, the external skin in the embryonal development shows a phase of formation of glycogen as long as it does not get hornified. Staining showed that the glycogen disappears with the change of normal epithelium into a carcinomatous superficial layer, just as it does in keratinisation. As the transition of normal epithelium into carcinoma occurs suddenly and without intermediate stages the glycogen is also seen to disappear suddenly in the areas where the normal epithelium changes into carcinomatous epithelium (Fig. 3). The proof of the presence or the absence of glycogen may serve to make the borderline between normal epithelium and cancer apparent. There are two methods of demonstrating glycogen by staining :—

(1) *Best's alkaline carmine method.*—This is very good for sections and gives clear, fine histological pictures, but it is not in the least suitable for the living tissues and for the demonstration of the borderline between carcinomatous and normal epithelium on the living, because the carmine solution is too alkaline, the amount of ammonia causing œdema and consequent necrosis of the tissues.

(2) *The aqueous iodine test.*—This method is not suitable for histological purposes, but is very good for demonstration in vivo and on the living. The aqueous solution of iodine causing no injury. The stratified squamous epithelium of the vagina is stained dark brown, while the cervical epithelium and the superficial cancerous layer remain quite white and unstained. If the solution is

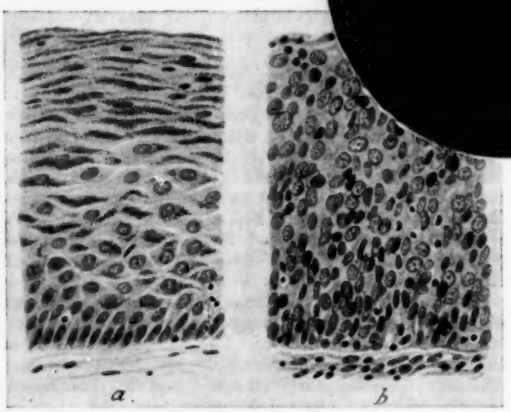

FIG. 3.—Cervical epithelium, stained by Best's method. (*a*) Normal: showing glycogen granules in upper part. (*b*) Malignant: complete absence of granules.

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It must be stated again that this iodine test is not specific for carcinoma but marks off only the areas which contain no glycogen. Glycogen is always absent in cancer but not only in cancer. It is also absent—

(1) In carcinomatous transformation of epithelium. These early cancers of the surface are to be distinguished by their sharp and map-like demarcation. With the central part of their periphery they touch the external os —i.e., the borderline between the columnar epithelium of the cervical canal and the squamous epithelium of the portio uteri (Fig. 4).

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(3) Keratinisation developing in prolapse may also cause the glycogen to disappear. This generally grows from multiple foci, but several more or less cornified spots may become confluent. The iodine staining gives a picture of white and brownish spots upon a dark background, often joining like clouds and often ill-defined.

(4) When the superficial layers of glycogen containing epithelium have been rubbed off by inflammation, by maceration, or by the examining finger or speculum. These traumatic desquamations are easy to diagnose, being sharply defined and somewhat deepened areas.

Thus we have different possibilities which cause the epithelium of the surface to remain white. A histological examination of the suspicious spot is therefore absolutely necessary. The positive or negative diagnosis of carcinoma is far too important not to require the complete security only to be obtained by histological examination. That is why I always refuse to make any diagnosis upon the mere iodine painting and always make a point of having the suspicious area histologically examined. This examination is restricted to the epithelium without losing any of its value, for in these early cases the question is whether the epithelium is carcinomatous or normal, and the positive or negative diagnosis is to be made from the part of the superficial layer that remained white. For this purpose it is quite sufficient to scrape off the superficial epithelium with a sharp spoon; sometimes it is easier to lift the epithelium with a spoon and then to get hold of it with a tissue forceps.

For fixation it proved advantageous not to use watery formaldehyde, but to use the combination recommended by Carnoy—alcohol abs. 60 parts, chloroform 30 parts, glacial acetic acid 10 parts. This solution has the advantage of fixing the tissue quickly and it does not contain water.

In the slide of the scrapings a diagnosis of cancer or no cancer has to be made; it must be based almost exclusively upon the characteristic cells, which are polymorphous and atypical, and upon the carcinomatous change and differentiation of epithelium. There is no uniform rule to follow for this diagnosis; certainly it is not as easy as the diagnosis of, say, tuberculosis or malaria. It requires experience and practice and must be learned systematically; but it is certain that no one should take the responsibility of giving a diagnosis in a doubtful case without a thorough study of the histology of each carcinoma and without profound practice.

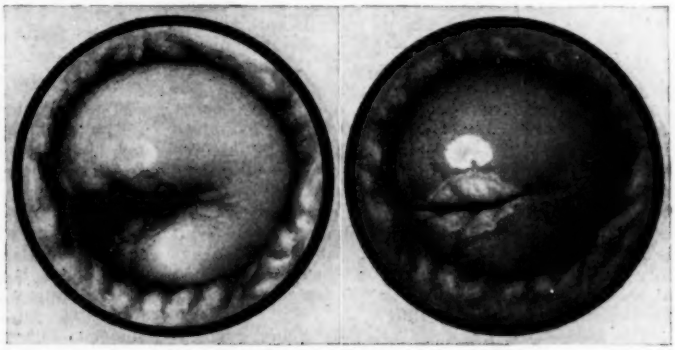

FIG. 4.—The iodine test. Appearance of carcinoma of the cervix (left) before and (right) after application of iodine.

The method of the iodine painting is easily carried out in an out-patient department, requiring no special training for the doctor and causing the patient no pain. It does not need complicated apparatus nor does it take long to do. The procedure of introducing a speculum, painting with iodine, wiping it off, and examining can be carried out within 3–4 minutes; the cost of the iodine solution is negligible. I must point out that the staining will vanish after a few minutes by evaporation and resorption of iodine. Ill-effects in patients hypersensitive to iodine were never seen.

A further field of application for the iodine painting is in the revelation of cancerous marginal zones of progressed carcinomata. These marginal zones frequently are clinically invisible and consequently are hidden from the eye of the operator. It will happen that the doctor believes he has operated the cancer in the healthy tissue while in reality the operation was carried out within the marginal cancerous superficial layer and part of it was left behind; then, of course, a recurrence will follow. This can be avoided if the operator will paint the border zone between cancer and normal epithelium with iodine. If there is a white zone the operation must not be confined to the white zone but carried into the brown zone. The operation is only radical if the line of incision is within the brown parts.

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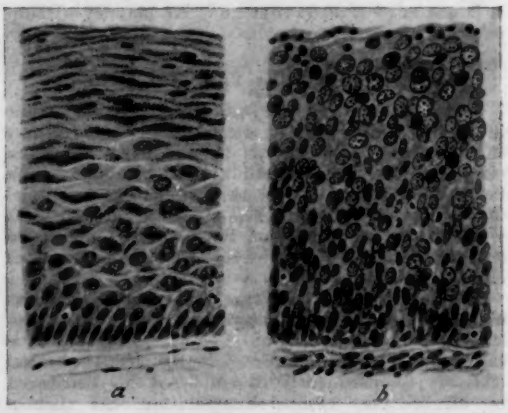

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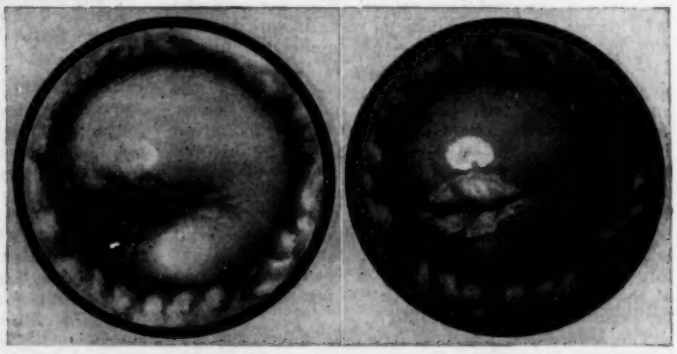

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RESULTS

The method can be applied without difficulty, but it has its full value only when carried out on

as many patients as possible. I have seen patients 25–26 years of age with smooth, homogeneous shining white portios that seemed altogether above suspicion to the eye of the clinician, but when painted with iodine they showed a small white speck, which when scraped off proved to be a carcinoma. No case should be considered absolutely and even should a portio appear clinically quite harmless the iodine staining may reveal an incipient cancer. The gynæcologist who paints only the suspicious cases is sure to miss the most important stage—the smallest, clinically latent cancer. The consequence is that the more general the examination by iodine painting the smaller will be the proportion of positive cases. In my last series, out of every 100 women examined in our out-patient department about 20 showed suspicious areas, and of these 20 only 1 or 2 proved to be cancers in the histological examination of the scrapings. But even if only 1 per cent. of the examined women give a positive diagnosis the result is still exceedingly satisfactory, for we must not forget that a carcinoma when detected and treated at that early stage gives nearly 100 per cent. security for definite permanent healing.

The iodine test has been tried by many gynæcologists; in England by Beattie, in France by Forgue and Pouliot, in Italy by Boschetti, Casati, and Cuizza, and in America by Graves, Norris, Smith and Pemberton, Stearns, &c. The last published negative results, but immediately afterwards he told me by letter that by iodine painting he had succeeded in revealing a cancer of the cervix that was diagnosed by the pathological institute of the University of Nebraska as the youngest carcinoma ever seen there. In America efforts are being made to examine patients two or three times a year by iodine painting. If the test is negative there is the certainty that there is no carcinoma in the area of the squamous epithelium. Should a cancer develop before the next examination the cancer if revealed at that next control examination will be so small that it will fully ensure definite permanent healing. If it were possible by this procedure to examine systematically at few months' intervals as large a number of women as possible, we might hope to get in this way a predominant proportion of cervical cancers for treatment at such stages as would fully guarantee permanent healing. Thus it would be possible greatly to lower the mortality of this disease.

BIBLIOGRAPHY

Beattie, J.: St. Bart.'s Hosp. Rep., 1932, lxv., 151.
Boschetti, M.: Atti d. Soc. Ital. di obst. e gyn., 1928, vol. xxvii.
Casati, A.: Boll. d. Leg. ital. per la lotta con. cancro, 1928.
Forgue, E.: Progrès méd., 1935, p. 1029.
Graves, W. P.: Surg., Gyn., and Obst., 1933, lvi., 317.
Cuizza, T.: Rev. ital. di ginec., 1930, xi., 331.
Heidler, H.: Wien. Klin. Woch., 1928, xli., 852.
Henriksen, E.: Surg., Gyn., and Obst., 1935, lx., 635.
Gandolfo-Herrera, R.: Rev. méd. latin-off. amer., 1934, xix., 843.
Norris, C. C.: Amer. Jour. Cancer, 1934, xx., 295.
Pouliot, L.: Méd. internat., Jan., 1932; Soc. méd. praticiens, July, 1932.
Pauchet, V.: Clinique, Paris, 1933, vol. xxviii.
Schiller, W.: Virchow Archiv f. path. Anat., 1927, ccixiii., 279; Arch. f. Gynäk., 1928, cxxxiii., 211; Zentralbl. f. Gynäk., 1928, lii., 1562, 1886; ibid., 1929, liii., 1056; Wien. med. Woch., 1931, lxxi., 1172; Wien. klin. Woch., 1931, xliv., 1563; Surg., Gyn., and Obst., 1933, lvi., 210; Arch. f. Gynäk., 1934, clv., 415; Virchows Archiv f. path. Anat., 1934, ccxcii., 577; Wien. klin. Woch., 1934, xlvii., 1161; Amer. Jour. Surg., 1934, ii., 269.
van Smith, George, and Pemberton, F. A.: Surg., Gyn., and Obst., 1934, lix., 1.
Stearns, R. J.: Nebraska Med. Jour., 1934, xxix., 375.

BRISTOL'S HOSPITALS.—The seven voluntary hospitals of Bristol need at least £250,000 for modernisation, equipment, and extension. A house-to-house collection is being taken to help to raise this sum.

OBSERVATIONS ON CASTLE'S INTRINSIC FACTOR IN PERNICIOUS ANÆMIA

BY C. C. UNGLEY, M.D. Durh., M.R.C.P. Lond.

ASSISTANT PHYSICIAN TO THE ROYAL VICTORIA INFIRMARY, NEWCASTLE-UPON-TYNE; LEVERHULME RESEARCH SCHOLAR OF THE ROYAL COLLEGE OF PHYSICIANS OF LONDON; AND

ROBERT MOFFETT

TECHNICAL ASSISTANT

THE classical experiments of Castle and his fellow workers [1-7] have shown that material effective for blood regeneration in pernicious anæmia arises from the interaction of an intrinsic (gastric) factor present in normal gastric juice and an extrinsic (food) factor. Literature up to November, 1935, is reviewed elsewhere.[8]

In November, 1935, at the suggestion of Dr. H. D. Dakin, we began experiments with the object of determining whether or not the hæmopoietic factor in gastric juice and gastric mucosa might be pepsinogen. The intrinsic factor was known not to be pepsin,[4] but this did not exclude pepsinogen: the precursor of an enzyme may have an action entirely different from that of the enzyme itself. Castle [7] obtained no positive result with gastric juice and meat muscle unless the mixture was neutralised before administration. Dakin [9] suggested as a possible explanation of this that beef muscle by adsorbing pepsinogen protected it from destruction even at pH 3, but that if the acidity persisted all pepsinogen was converted to pepsin. On this theory, the hæmopoietic inactivity of fundus * mucosa as reported by Meulengracht [10] was explained as being due to the destruction of pepsinogen in the presence of hydrochloric acid from the fundus glands. There were certain facts which could not well be explained on this hypothesis, such as the presence of intrinsic factor in desiccated pylorus [10] which was free or almost free from peptic activity and presumably from pepsinogen. †

The first step in the present work was to investigate the pepsinogen theory. For this purpose the fundus mucosa of pigs' stomachs was extracted under alkaline conditions designed to preserve pepsinogen. Subsequently the same method was applied to pylorus mucosa with results to be described. Later (February, 1936) the trend of investigations was modified by Greenspon's suggestion [11] that the gastric antipernicious anæmia factor was a hormone effective alone if protected from the action of pepsin. He described 2 cases of pernicious anæmia which responded to depepsinised desiccated gastric mucosa fed without the addition of beef. The feeding of cold neutralised normal gastric juice, collected and administered under conditions designed to prevent peptic activity, was effective in one case of pernicious anæmia, without the addition of beef or other source of "extrinsic factor." On the basis of these findings Greenspon questioned the existence of an "extrinsic factor" as conceived by Castle, and suggested that in Castle's basic experiments beef, by adsorbing pepsin, merely protected the gastric hæmopoietic factor from destruction. With regard to autolysed yeast, as used in Castle's later experiments,[6] Greenspon suggests that it "contains ele-

* English terminology, corpus region.

† The method used [12] involved adding an amount of edestin solution at pH 1·5 almost certainly sufficient to activate pepsinogen had it been present.

ments that are capable of stimulating the cells that elaborate the gastric anti-anæmic agent, or that these elements furnish material for the synthesis of the latter."

In view of past observations,[12] however, it seemed to us unlikely that the rôle of autolysed yeast could be entirely explained in this way, nor did it seem probable that adsorption of pepsin would account for its effect. Subsequent experiments were therefore modified to test the validity of Greenspon's theories.

THE INQUIRY AND ITS RESULTS

Fourteen fully investigated cases of Addisonian pernicious anæmia in relapse, all showing a histamine-refractory achlorhydria, were utilised for this work. For brevity, clinical and biochemical findings other than those required for the present analysis are omitted. No case utilised showed evidence of spontaneous remission during a control period of 10 days. A shorter period was allowed in cases where the erythrocyte count fell rapidly. In Case 9 a small reticulocytosis without rise of red blood-cells occurred during the control period, but the counts remained stationary during the 10 days preceding the commencement of treatment.

The patients received a meat-free diet throughout. Fundus and pylorus mucosa extracts were fed as a drink without flavouring. When Marmite was used it was given either in sandwiches or as a drink together with white bread and butter. When the object was to prevent their interaction stomach extracts or gastric juice were given four hours before breakfast and the marmite at tea-time. When interaction was desired, the stomach preparation and the marmite were fed at the same time (3.30 P.M.). Liquid yeast extracts, such as a 65 per cent. alcohol-soluble fraction of unflavoured, unsalted marmite (A.E.M.), were mixed with the stomach extract immediately before administration. The results are summarised in the accompanying Table.

Fundus Mucosa Extract.—The fundus area[10] was excised from the stomach of freshly killed pigs and the mucosa dissected from the muscle. The mucosa, rich in peptic and oxyntic glands,‡ was minced and extracted under conditions designed to preserve pepsinogen and prevent activation of pepsin.[13] The materials were ground together in a mortar in the proportion of one part mucosa, one-tenth part kieselguhr, and four parts tenth-normal sodium bicarbonate solution. After filtration through nainsook, the fundus mucosa extract (pH 8 to 8·5) was kept at 0° to 2° C. until administration. The peptic activity, after acidification, was usually 32 units by Fuld's edestin method (pH before addition of edestin 1·5 approx.). 150 c.cm. of this extract, derived from 40 g. of fundus mucosa, was fed simultaneously with marmite to 3 patients. The results were negative but inconclusive in Case 1, and definitely negative in Cases 2 and 14. In a further patient (Case (5*a*)), a concentrate of 2·6 per cent. pure pepsinogen in glycerin 80 to 90 per cent. (kindly supplied by Dr. R. M. Herriott of Princeton, U.S.A.) was given daily in doses of 1·5 c.cm. (diluted to 30 c.cm.) along with marmite. Except for a slight reticulocytosis the result was negative.

Pylorus Mucosa Extract.—The method of extraction described for fundus was next applied to pylorus mucosa. Part of the pyloric end of pigs' stomachs was excised[10] and the mucosa‡ dissected off. From each pig's stomach (average weight 700 g.) the average yield was 56 g. of fundus mucosa and 35 g. of pylorus mucosa. As with fundus extract, the pH was 8·0 to 8·5, and 150 c.cm., derived from 40 g. was given daily. No peptic activity could be detected by the method mentioned above. To overcome difficulties associated with bacterial infection later batches of fundus and pylorus extract were filtered through a cotton-wool plug and rendered 0·3 per cent. in respect to trikresol.

The pylorus mucosa extract was given simultaneously with a source of extrinsic factor (marmite 12 g. or 65 per cent. alcohol-soluble fraction of unflavoured, unsalted marmite (A.E.M., 12 c.cm.)) in 8 cases. In one instance (Case 4) the experiment was abandoned after two days because of gastro-enteritis. In Case 12 treatment was discontinued after seven days because of gastro-enteritis and fever lasting from the sixth to ninth day, but there was nevertheless a moderate reticulocytosis and a satisfactory rise of red blood-cells, both delayed by the infection.

Five patients (Cases 3, 5 (*b*), 9 (*b*), 10 (*b*), and 11 (*b*)) received for 10 days pylorus extract together with marmite 12 g. Although the reticulocyte responses were small, subjective improvement was rapid and the rate of increase of red blood-cells satisfactory. Despite a high average initial red blood-cell count (2·02 millions per c.mm.) these 5 cases showed an average increase of 0·63 million in 10 days, and 1·20 millions in 20 days. This compares well with the increases of 0·46 and 1·25 millions in 10- and 20-day periods (from an initial level of 1·35 millions), which followed the feeding of extract derived from rather more than 250 g. of liver daily (see Ungley, Davidson, and Wayne,[15] Table III.c, calculated from data reported by Minot, Cohn, Murphy, and Lawson[16]). The average increase in 20 days (derived from figures available in 4 out of the 5 cases) is particularly satisfactory, since potent material was administered only during the first half of that period.

In Case 13 there was a less satisfactory response, which may or may not have been due to the use of A.E.M. 12 c.cm. instead of marmite 12 g., or to the fact that the preparation of the stomach extract had been modified (further filtration, addition of trikresol to 0·3 per cent.). During the ensuing 10 days the same materials incubated for three hours at 37·5° C. immediately prior to administration produced a secondary reticulocytosis but no other evidence to suggest that such incubation had led to increased potency.

The hæmopoietic effectiveness of pylorus mucosa is in contrast with fundus mucosa's inactivity in this respect, and accords with Meulengracht's findings: pepsin (and pepsinogen) and the anti-anæmic factor are disassociated physiologically and anatomically in the stomach.[10]

Inactivation of Pepsin with Alkali.—Peptic activity is destroyed at pH 9·8 and at Dr. Dakin's suggestion this method was used in the present investigation to "depepsinise" normal gastric juice and stomach extracts. The gastric juice was collected from normal students during a period one hour after the administration of histamine 0·5 mg. Immediately after withdrawal each sample of juice was placed in a vessel surrounded by ice, and normal caustic soda added from a burette, with rapid stirring, until the mixture was just alkaline to litmus. The day's yield of juice was then adjusted to pH 9·8 by the addition of normal NaOH, the pH being measured by electric potentiometer. Material treated in this way showed

‡Characteristics of fundus and pylorus mucosa confirmed microscopically.

SUMMARY OF RESULTS

No.	Age, sex.	Initial R.B.C. millions per c.mm.	Treatment. Days.	Material.	Retic. response. per cent. Actual peak.	Day	Expected maximum	Increase in R.B.C., millions per c.mm. Days 10	15	20	30	Complicating factors.	Result.
1	49 M.	(a) 2·36	0 to 9	Fundus ext. + marmite.	Nil	—	12·4	Nil	—	—	—	Diarrhœa.	Negative (inconclusive).
		(b) 2·31	10th day	Liver ext. 400 mg.	5·6	9	18·5 (i.v.)	Nil	—	—	—	Cystitis (S.C.D.)	—
		(c) 2·28	19th &c.	Liver ext. 600 mg. twice week.	(6·3)	5	18·5 (i.v.)	0·58	0·82	1·21	1·69	Cystitis.	—
2	64 F.	(a) 2·38	0 to 10	Fundus ext. + marmite.	Nil	—	12·4	**0·24**	**(0·31)**	—	—	—	Negative.
		(b) 2·68	11 to 21	Desicc. stomach 28 g.	2·9	7	8·5	0·42	—	—	—	—	—
3	53 F.	2·89	0 to 9	Pylorus ext. + marmite.	Nil	—	6·2	**0·62**	—	—	**0·98** (50)	—	Positive.
4	58 F.	1·75	0 to 1	„ „	—	—	—	—	—	—	—	Expt. abandoned owing to V. & D.	—
5	51 F.	(a) 1·92	0 to 9	Pepsinogen conc. 1·5 c.cm. + marmite.	4·6	10	20·3	Nil	(Nil)	—	—	—	Negative.
		(b) 1·82	12 to 22	Pylorus ext. + marmite.	(7·1)	7	22·2	**0·48**	**1·08**	**1·40**	—	—	Positive.
6	53 M.	(a) 2·73	0 to 9	Pylorus ext. (taken to pH 12·1).	2·0	9	8·5	**0·26**	**(0·47)**	—	—	—	Neg. or slight.
		(b) 3·07	12 to 21	Pylorus mucosa 40 g.	—	—	4·1	**0·25**	**(0·29)**	—	—	—	Neg. or slight.
		(c) 3·32	22 to 32	Pylorus mucosa + marmite.	—	—	2·2	**0·38**	**0·86**	**0·96**	—	—	Positive.
7	59 F.	(a) 1·31	0 to 9	Depepsinised G.J. and marmite separately.	4·7	7	33·2	**Loss**	**(Loss)**	—	—	—	Negative.
		(b) 0·98*	10 to 19	Same together.	(15·8)	8	41·8	**0·31**	**0·30**	—	—	Gastro-enteritis with fever 9th to 13th day.	Mild positive.
		(c) 1·27	27th day	Liver ext. 50 mg.	(14·2)	6	38·8 (i.v.)	Nil	—	—	—	—	—
		(d) 1·21	37th day	Liver ext. 200 mg.	(20·4)	5	41·5 (i.v.)	0·83	1·61	2·06	—	—	—
8	52 M.	(a) 1·38	0 to 4	Fundus ext. + marmite (taken to pH 9·8).	Nil	—	30·8	**Loss**	—	—	—	Infection with fever 5th day to 7th day. Expt. abandoned.	Negative (inconclusive) (no R.R. in 9 days).
		(b) 1·13	5th day	Liver ext. 600 mg.	21·9	8	44·3 (i.v.)	0·96	1·50	2·16	—	—	—
9	55 M.	(a) 1·62	0 to 9	Pylorus ext. + marmite separately.	Nil	—	26·2	**Loss**	**(Nil)**	—	—	—	Negative.
		(b) 1·39	10 to 19	Same together.	5·7	7	30·8	**0·36**	**0·45**	**0·51**	**0·75**	—	Mild positive.
10	55 F.	(a) 1·97	0 to 9	Pylorus ext. + marmite separately.	8·1	7	18·6	**Loss**	**(Nil)**	—	—	—	Slight ?
		(b) 1·59	10 to 19	Same together.	8·1 (10·2) 8·9	5 9 10	26·2	**0·55**	**0·80**	**1·07**	**1·33**	—	Positive.
11	41 M.	(a) 2·63	0 to 9	Pylorus ext. + Y.E. 6 c.cm.	4·7	8	9·8	**Loss**	**(0·49)**	—	—	—	Neg. or slight.
		(b) 2·42	10 to 19	Pylorus ext. + marmite.	(3·7)	3	12·4	**1·14**	**1·63**	**1·83**	—	—	Positive.
12	51 M.	(a) 1·48	0 to 6	Pylorus ext. + marmite taken to pH 9·8.	15·0	15	28·4	Nil	**0·50**	**1·02**	—	V. & D. with fever 6th to 9th day.	Positive.†
		(b) 2·47	25th day	Liver ext. 50 mg.	11·9	6	15·5 (i.v.)	0·41	—	—	—	—	—
13	51 M.	(a) 1·36	0 to 9	Pylorus ext. + A.E.M. 12 c.cm.	12·6	9	30·8	**0·33**	**(0·40)**	—	—	—	Positive.
		(b) 1·69	10 to 19	Pylorus ext. + A.E.M. 12 c.cm., incubated 3 hours.	5·4	11	24·2	0·14	—	—	—	—	Sl. increased effect ?
14	55 M.	(a) 2·43	0 to 9	Fundus ext. + A.E.M. 24 c.cm.	Nil	—	12·4	Nil	—	—	—	—	Negative.
		(b) 2·25	10 to 19	Pylorus ext. + A.E.M. 24 c.cm.	—	—	13·9	—	—	—	—	Expt. incomplete	—

EXPLANATORY NOTES

Days refers to days after the commencement of treatment.

Reticulocytes.—Except in the case of injected liver fractions where figures for intravenous liver therapy (i.v.) are given, the "expected maxima" are those calculated by Bethell and Goldhamer [14] for desiccated stomach. In assessing the effect of therapy account must be taken of the fact that "secondary" reticulocyte peaks (given in parentheses) do not usually reach the levels expected from a "primary" response. Where the summit of the response was a "plateau" rather than a "peak" (Case 10 (b)) counts closely approximating to the maximum are given.

Red blood-cell increases attributable to experimental material (i.e., material other than liver extract or desiccated stomach) are printed in heavy type. When the rise of red blood-cells at 10 days was of doubtful significance, the ineffectiveness of the material was sometimes made evident by the absence of any further increase at the 15th day (given in parentheses where this point occurred 5 days after the commencement of the second experimental period). When effective material was fed the red blood-cell count had not usually risen by the 5th day, but on the other hand the increase, evident at the 10th day, usually continued for 15, 20, or even 30 days, despite the absence of further treatment.

Abbreviations.—R.B.C. = red blood-cells. Retic. = reticulocyte. Ext. = extract. Conc. = concentrate. G.J. = gastric juice. V. & D. = vomiting and diarrhœa. S.C.D. = subacute combined degeneration. Expt. = experiment. Sl. = slight. R.R. = reticulocyte response.

* Count on 13th day. † Response delayed by infection.

no peptic activity as measured after acidification (see fundus extract). In Case 7, with a red blood-cell level of 1·31 millions per c.mm., 100 c.cm. of such juice was given on an empty stomach at 5.30 A.M. with no food for four hours. Marmite 12 g. was given at 3.30 P.M. either in sandwiches or as a drink. There was a slight reticulocytosis (4·7 per cent.) but the patient became worse and the red blood-cells fell to 0·98 million. At the end of 10 days the depepsinised gastric juice was given simultaneously with the marmite at 3.30 P.M. so that interaction could take place within the body. Reticulocytes rose to 15·8 per cent. on the eighth day and the red blood-cells rose from 0·98 to 1·29 millions per c.mm. on the tenth day, with subjective improvement and cessation of sore tongue. The subsequent injection of liver fractions led to further reticulocytoses, and a satisfactory rise of red blood-cells. The sub-maximal response to gastric juice and marmite even when given together suggests either (1) that the dose

of gastric juice was too small or (2) that pH 9·8 impaired hæmopoietic activity or (3) that the patient was relatively resistant to oral therapy. Besides indicating the necessity for interaction with extrinsic factor, this case shows that subjection to pH 9·8 for 30 minutes, which will inactivate pepsin and pepsinogen, is not sufficient to abolish hæmopoietic activity. This result is confirmed in Case 12 with red blood-cells 1·48 millions: pylorus extract subjected to pH 9·8 fed together with marmite led to a reticulocyte response of 15 per cent. and a satisfactory rise of red blood-cells (both delayed by intercurrent infection). The negative or slight effect obtained in Case 6 (*a*) is not relevant since no source of extrinsic factor was provided in this instance; neither is the negative result obtained with fundus extract subjected to pH 9·8 (Case 8) since fundus is in any case without hæmopoietic effect (see above).

Necessity for Interaction with Extrinsic Factor.—The relative or absolute ineffectiveness of sources of intrinsic factor fed without or separate from material containing extrinsic factor is indicated by the negative or inconclusive results obtained with depepsinised gastric juice (Case 7(*a*), already described), pylorus mucosa (Case 6(*b*)), and pepsin-free extracts of pylorus mucosa (Cases 9(*a*), 10(*a*), 11(*a*)§). In Case 6(*b*) and (*c*), with an initial red blood-cell count of 3·07 millions per c.mm., the feeding of pylorus mucosa alone was associated with an increase in red blood-cells of only 0·29 million per c.mm. in 15 days, whereas simultaneous administration with marmite led to a rise of 0·86 million per c.mm. in 15 days. In Case 9, with red blood-cells 1·62 millions per c.mm., there was no response to pylorus extract and marmite fed separately in a manner designed to prevent their interaction. When, for the next 10 days, these materials were given simultaneously, there was a reticulocytosis of 5·7 per cent. on the seventh day and a gain in red blood-cells of 0·36, 0·45, 0·51, and 0·75 million per c.mm. in 10, 15, 20, and 30 days respectively without further treatment. In Case 10, with red blood-cells 1·97 millions per c.mm., the administration of pylorus extract and marmite given separately to prevent their interaction was accompanied by a reticulocytosis of 8·1 per cent. on the seventh day, but the red blood-cell count fell to 1·59 millions per c.mm. When fed simultaneously for the next 10 days these materials produced a prolonged secondary reticulocytosis reaching 8·1, 7·9, 8·2, 8·9, 10·2, and 8·9 per cent. on the fifth to tenth days respectively, and without further treatment the red blood-cells increased by 0·55, 0·80, 1·07, and 1·33 millions per c.mm. in 10, 15, 20, and 30 days.

In the case of a 65 per cent. alcohol-soluble fraction of autolysed yeast, which was effective as a source of extrinsic factor (Case 13), no diminution of peptic activity could be detected after this extract was incubated in contact with gastric juice or fundus mucosa extract. Altogether it is evident that the rôle of extrinsic factor in autolysed yeast cannot be explained solely, if at all, by adsorption of pepsin. Moreover, it is unlikely that its rôle is to stimulate the cells that elaborate the gastric anti-anæmic agent,[11] otherwise one would have expected much the same effect in Cases 7, 9, and 10 whether the two materials (*a*) depepsinised gastric juice or pylorus extract and (*b*) marmite were given at widely separate intervals or simultaneously.

§ In Case 11 the yeast extract given in the first period (*a*) was clearly ineffective as a source of extrinsic factor, since no significant response occurred until marmite was substituted.

SUMMARY AND CONCLUSIONS

(1) Experimental data obtained in 14 cases of pernicious anæmia are recorded.

(2) A watery extract of fundus mucosa of pigs' stomachs (pH 8·0 to 8·5), containing pepsinogen but prepared in a manner designed to prevent activation of pepsin, when administered together with a source of extrinsic factor gave negative results in 2 cases and a negative but inconclusive result in a third.

(3) A concentrate of pure pepsinogen in glycerin was likewise ineffective as a source of intrinsic factor in 1 case.

(4) A watery extract (pH 8·0 to 8·5) of pylorus mucosa, prepared as for fundus, when administered in amounts derived from 40 grammes of mucosa, together with a source of extrinsic factor, was effective in 6 cases.

(5) The intrinsic factor was not destroyed by a degree of alkalinity (pH 9·8 for 30 minutes) which will inactivate pepsin and pepsinogen (2 cases).

(6) Pepsinogen and the anti-anæmic factor are dissociated physiologically and anatomically in the stomach (cf. Meulengracht[10]).

(7) Depepsinised gastric juice and pepsin-free extracts of pylorus mucosa had little or no hæmopoietic effect when given perorally unless interaction with a source of extrinsic factor (e.g., autolysed yeast) was allowed.

(8) In these circumstances the rôle of the extrinsic factor could not be attributed to adsorption of pepsin, since none was present.

(9) The effect of intrinsic and extrinsic factors given simultaneously is considerably greater than the sum of effects, if any, produced by the two factors given under conditions designed to prevent their interaction.

(10) This interaction of intrinsic and extrinsic factor does not require incubation outside the body.

(11) Since autolysed yeast in the dose employed (12 g. daily) required interaction with normal gastric juice or pylorus extract to render it effective for blood regeneration, it probably acts by virtue of its content of extrinsic factor and not because "it contains elements that are capable of stimulating the cells that elaborate the gastric anti-anæmic agent or because these elements furnish material for the synthesis of the latter."[11]

(12) None of the findings in this investigation was incompatible with Castle's basic hypothesis.

REFERENCES

1. Castle, W. B., and Locke, E. A.: Jour. Clin. Invest., 1928, vi., 2.
2. Castle: Amer. Jour. Med. Sci., 1929, clxxviii., 748.
3. Castle and Townsend, W. C.: Ibid., 1929, clxxviii., 764.
4. Castle, Townsend, and Heath, C. W.: Ibid., 1930, clxxx., 305.
5. Castle, Heath, and Strauss, M. B.: Ibid., 1931, clxxxii., 741.
6. Strauss and Castle: New England Jour. Med., 1932, ccvii., 55.
7. Castle: Science, 1935, lxxxii., 159.
8. Ungley, C. C.: Nature, 1936, cxxxvii., 210.
9. Dakin, H. D.: Personal communication.
10. Meulengracht, E.: Acta Med. Scand., 1934, lxxxii., 352; Proc. Roy. Soc. Med., 1935, xxviii., 841.
11. Greenspon, E. A.: Jour. Amer. Med. Assoc., 1936, cvi., 266.
12. Ungley and James, G. V.: Quart. Jour. Med., 1934, n.s. iii., 523.
13. Holter, H., and Northrop, J. H.: Proc. Soc. Exper. Biol. Med., 1935, xxxiii., 72.
14. Bethell, F. H., and Goldhamer, S. M.: Amer. Jour. Med. Sci., 1933, clxxxvi., 480.
15. Ungley, Davidson, L. S. P., and Wayne, E. J.: THE LANCET, Feb. 15th, 1936, p. 349.
16. Minot, G. R., Cohn, E. J., Murphy, W. P., and Lawson, H. A.: Amer. Jour. Med. Sci., 1928, clxxv., 599.

MODERN TECHNIQUE IN BRONCHOGRAPHY

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With the increasing use of a variety of opaque media to delineate the bronchial tree, it has become necessary to employ a word to denote the process itself as apart from any particular medium, and to this end the term "bronchography" has been coined. It seems, therefore, indefensible to continue the use of the trade name "Lipiodol" as a synonym, for although this French product is the one chiefly employed for the purpose in this country, it is by no means the only one. Others are Neo-hydriol, an English compound of similar constitution, and Iodipin, which comes from Germany.

Iodism of varying degrees from a mild rash to a severe and even fatal reaction [1] has in a small proportion of cases followed the introduction of these iodine-containing media, so that for patients who have previously shown iodine sensitivity it is advisable to use a brominised oil such as Brominol or Bromipin. These media are less opaque to X rays so that the resultant bronchograms are not as a rule well defined.

A retrospective study of the earlier bronchograms in which we were pleased to see a little lipiodol in some bronchi, even if not the diseased ones, takes us through the stages of evolution to present-day complete bronchography and the reasons which have engendered it. In the first place, a radiologist who is faced with a film showing incomplete filling of the bronchi, but in which such bronchi as are outlined appear to be normal, can only report to that effect; he cannot give a satisfactory opinion on the remainder, so that disease thereof has not necessarily been excluded. Secondly, the increasing safety and success of lobectomy and pneumonectomy, particularly for bronchiectasis, have made it essential that the exact number of lobes involved in the disease process should be known beforehand in order that the risks of operation and the chances of complete or partial cure may the more surely be assessed. An ancillary consideration is the follow-up of these cases, in which a complete bronchography before and after the operation is imperative. Even in the medical treatment of bronchiectasis the recent successful introduction of continuous postural drainage [2] has rendered a more exact localisation of the disease desirable, so that we may decide the correct position or positions to be adopted in any particular case. Again the follow-up of serious medical treatment demands complete outlining of the bronchi.

ANATOMICAL CONSIDERATIONS

The methods to be described here of studying the bronchial tree have been evolved from a consideration of its anatomy as described recently by Nelson,[3] a recapitulation of the main features of which will help in the understanding of the technique involved.

The lung is considered fundamentally to consist of four lobes—upper, middle, lower, and dorsal. On the right side the lower and dorsal elements are fused to form what is known as the lower lobe, the other two remaining separate, whilst on the left side the upper lobe consists of upper and middle elements combined, and the lower represents, as on the right, lower and dorsal elements. There is a separate main bronchus to each of the four elements, and it is necessary in complete bronchography to fill all of these as well as their more important branches. The upper lobe bronchus on the right runs laterally from the lateral wall of the main bronchus for about 1 cm. before dividing into its three components, apical, pectoral, and axillary, terms which are self-explanatory. On the left side the upper and middle lobe bronchi spring from a common stem which arises from the antero-lateral wall of the main bronchus. The upper lobe components are similar to those on the right except that the apical and axillary branches are fused in the earlier part of their course. The middle lobe bronchus on the right springs from the main bronchus and runs forwards, outwards, and downwards. On the left it pursues a similar course after taking origin from its stem in common with the upper lobe bronchus. The dorsal branches are almost identical on the two sides, springing from the main descending bronchus, which then proceeds as the lower lobe bronchus for a short distance before dividing into its three basal branches, anterior, axillary, and posterior.

TECHNIQUE

From a study of these anatomical points it will be seen that an antero-posterior view of the chest is quite insufficient for a satisfactory review of the bronchial tree after injection of an opaque medium, and that a lateral view will be required. If, however, both sides have been filled indiscriminately, the overlap in the lateral view will be at best a poor palimpsest, at worst a confused tangle of bronchi impossible to unravel. Stereoscopic radiograms will overcome this disadvantage, but, as few hospitals in England are equipped with apparatus even to take stereoscopic bronchograms, still less to view them in ward and theatre, it has been incumbent on us to devise a technique which will render the procedure superfluous.

It is found in practice that the complete outlining of each lung separately with corresponding antero-posterior and lateral views is almost always satisfactory, the only disadvantage being that two sessions are necessary. This is no hindrance in an in-patient as an interval of two days is usually sufficient to clear the treated lung of the greater part of the opaque substance so that it does not obscure the lateral view of the other side, but it does constitute a grave disadvantage in out-patients who are working and unable to come up more than once, and in nervous patients who may refuse further to submit themselves after their first ordeal. For these patients a one-stage compromise of great usefulness has been devised—namely, the filling of the diseased or most diseased side completely, the taking of an antero-posterior and a lateral film immediately, followed by filling of the other side partially or completely as circumstances may dictate, and a further antero-posterior film. In practice it is usually sufficient to fill the lower and middle lobes of the less affected side.

The lower lobe being the one most frequently involved in bronchiectasis, and the most easily filled, indeed being not infrequently the only one filled by the older methods, we proceed to outline its bronchi first. With the patient in a semi-recumbent position and slightly turned to the side which it is proposed to fill, about 10 c.cm. of the oil is introduced and a few seconds allowed for it to run down to the smaller bronchi of the lower and dorsal lobes. The patient then sits up, still leaning to the same side and also a little forward;

about 5 c.cm. of the medium is introduced and it will be found that this runs directly into the middle lobe. Again the patient is returned to the semi-recumbent position, but this time lying completely on the side that is being filled, and the remaining few c.cm. injected. This last portion runs down the lateral wall of the trachea and main bronchus and enters the orifice of the upper lobe bronchus by gravity, but, as the left upper lobe bronchus arises rather more anteriorly, it is advisable to have the patient slightly inclined to the prone position to make more certain of it when filling this side. The oil having been injected and having already commenced to fill the axillary part of the upper lobe, the apical and pectoral divisions are filled most reliably by turning the patient almost completely on his face and tilting the head down or the feet up. The filling of the one side is then complete and films are taken as described.

METHODS OF INTRODUCING OPAQUE MEDIA

It is outside the scope of this paper to enter into a full discussion on the vexed question as to which is the best method of introducing iodised oil into the bronchi. I prefer the usual cricothyroid route, which possesses only one disadvantage in connexion with the methods described—namely, that it is necessary to remove the needle during the filling of the upper lobe, thus necessitating its reinsertion if it is desired to fill the other side at the same session. In practice this is of no importance as the area is already anæsthetised and no added discomfort is caused to the patient. The nasal catheter method is perhaps preferable in some ways, not having this disadvantage, but on the other hand, to obtain full benefit from the procedure, it is advisable to watch the progress of the opaque oil under the screen and yet to be able to take a radiogram at suitable intervals, a feat which is not possible in many hospitals owing to the disposition of the X ray plant. The transnasal method recently described by Forestier and Leroux [3] is much simpler but less certain, though good results in filling the upper lobe are claimed. The other method in common use, transglottic injection with a laryngeal syringe, is the most difficult for complete bronchography because of the dexterity required for injecting oil when the patient is in the recumbent lateral position.

Whatever the method of injecting the opaque medium employed however—and no doubt each will prefer that to which he is accustomed—the positions adopted for filling individual lobes will be the same, as should by now be evident. The superiority of the technique described lies, not in its absolute certainty, for no method can have this, but in the principle that by its calculated completeness it reduces error to a minimum. It will readily be understood that the neurotic patient and the patient who coughs abundantly will defeat even the most painstaking efforts, and that a dose of opium preceding the manœuvres is still our best antidote for both. Care must be taken, too, that the oil is at a suitable temperature, for if too hot it will run rapidly into the alveoli and obscure the bronchograms, and if too cold it will not reach the lesser bronchi. Children under a general anæsthetic present constant difficulty in posturing, but with a little practice a fair attempt at the one-stage technique may be made; the middle lobe is sometimes filled more easily in the prone position, the upright posture being difficult to accomplish.

My thanks are due to Mr. H. P. Nelson and Dr. Lee Lander for some suggestions about the one-stage technique described.

REFERENCES

1. Scadding, J. G.: Brit. Med. Jour., 1934, ii., 1147.
2. Nelson, H. P.: Ibid., 1934, ii., 251.
3. Forestier, J., and Leroux, L.: Radiology, 1935, xxiv., 743.

CLINICAL AND LABORATORY NOTES

A SIMPLE TEST FOR LATENT JAUNDICE

BY H. S. BRODRIBB, B.M Oxon.
LATE HOUSE PHYSICIAN, ST. BARTHOLOMEW'S HOSPITAL; AND

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ASSISTANT PHYSICIAN, ST. BARTHOLOMEW'S HOSPITAL; PHYSICIAN, WOOLWICH MEMORIAL HOSPITAL

IN the diagnosis of suspected hepatic or biliary disease it is important to know whether the bilirubin in the blood is increased. Unfortunately, this fact can seldom be recognised by the observation of jaundice in the skin or sclerotics until the concentration of bilirubin has risen from the normal (between 0·1 and 0·4 mg. per cent.) to 2 mg. per cent. (4 units of van den Bergh) or over. The exact concentration can, of course, be determined by the van den Bergh reaction, but this is often impracticable at the bedside. O. Klein [1] (1931) showed that wheals produced in the skin of jaundiced patients by the intradermal injection of minute quantities of histamine became more deeply yellow than the surrounding skin. Further, he found that a yellow colour could be seen in histamine wheals when the concentration of bilirubin in the blood, though raised, was insufficient to produce jaundice in the rest of the skin or in the sclerotics. He attributed this phenomenon to the abnormal permeability of the capillaries for bile-pigment caused by the histamine, allowing the pigment to escape and concentrate in the wheal.

We have carried out this test on a number of cases and have found it to be a simple and reliable method of determining qualitatively the presence of latent jaundice. It is useful particularly as a clinical test, even if only as a preliminary to more complicated quantitative estimations. In cases of obstruction of the biliary tract or of damage to the liver cells the test is constantly positive when the concentration of bilirubin in the blood has risen above 0·5 mg. per cent. (1 unit of van den Bergh). In cases of hæmolytic jaundice the test is not positive until the concentration of bilirubin is rather greater (between 1·1 and 1·4 mg. per cent.). This conforms with the clinical observation that in cases of hæmolytic jaundice the yellow colour is not seen in the skin or sclerotics until the concentration of bilirubin has reached a higher figure than in cases of obstructive jaundice.

TECHNIQUE

The patient is placed in good daylight. Direct sunlight and artificial light are unsatisfactory. A small area of skin free, if possible, from sunburn and freckles is cleaned with spirit. The most suitable site is usually on the upper arm or on the back. One minim of a sterile solution containing 0·1 mg. of histamine is injected *intradermally* into this area by means of a fine hypodermic or special intradermal needle. It is essential that the injection should be made intradermally and if it is done correctly a small

[1] Klin. Woch., 1931, x., 2032.

white circumscribed bleb is produced in the skin. The dose of histamine should not exceed 0·1 mg. as larger amounts may produce an unpleasant reaction. The preparation used by us was histamine acid phosphate (Burroughs, Wellcome and Co.): 0·3 mg. of this salt is equivalent to 0·1 mg. of histamine. Within about five minutes a circular wheal, surrounded by an erythematous zone, develops in the region of the injection. This may also extend in a linear fashion for a short distance along the neighbouring lymphatics. In 10 to 20 minutes the wheal reaches its maximum size; any moisture on the surface of the wheal should be wiped away before it is examined.

If the test is positive the wheal is definitely yellow when compared with the normal skin outside the erythematous zone. This yellow colour is much enhanced by the pressure of a glass slide or by placing the two thumbs on each side of the wheal and stretching it between them, the observation being made at arms length. If there is any doubt as to whether the wheal is yellow or not, the test is regarded as negative. When the patient is already jaundiced, the colour of the wheal will be a deeper yellow than that of the adjacent skin, but in such cases the test is obviously unnecessary.[2]

Table Showing Results of the Test

—	No. of cases.	Bilirubin. Mg. per cent.	Bilirubin. Indirect Van den Bergh units.	Result.
OBSTRUCTIVE AND HEPATOGENOUS GROUP —i.e., cholelithiasis, catarrhal jaundice, toxic jaundice, &c.	20	Over 2·5	Over 5·0	Pos.
	13	2·5 to 0·8	5·0 to 1·6	Pos.
	2	0·75	1·5	Pos.
	3	0·7	1·4	Pos.
	3	0·6	1·2	Pos.
	1	0·55	1·1	Pos.
	2	0·5	1·0	Pos.
	2	0·5	1·0	Neg.
	1	0·45	0·9	Neg.
	1	0·4	0·8	Neg.
HÆMOLYTIC GROUP —i.e., acholuric jaundice, pernicious anæmia, &c.	6	Over 2·5	Over 5·0	Pos.
	5	2·5 to 1·8	5·0 to 3·6	Pos.
	2	1·6	3·2	Pos.
	1	1·5	3·0	Pos.
	2	1·4	2·8	Pos.
	2	1·1	2·2	Neg.
	2	1·0	2·0	Neg.
	1	0·8	1·6	Neg.
	3	0·7 to 0·5	1·4 to 1·0	Neg.
NORMAL CONTROLS	22	0·3 or less.	0·6 or less.	Neg.

RESULTS

The results of the test in a number of cases are shown in the accompanying Table. The obstructive and hepatogenous group includes such cases as cholelithiasis, catarrhal jaundice, and toxic jaundice. It will be seen that the threshold for this group is clearly defined at 0·5 mg. per cent. of serum bilirubin (1 unit indirect van den Bergh). The hæmolytic group includes such cases as acholuric jaundice and pernicious anæmia. The threshold for this group is higher and lies somewhere between 1·1 and 1·4 mg. per cent. serum bilirubin (2·2 to 2·8 units indirect van den Bergh).

We wish to thank the members of the department of chemical pathology at St. Bartholomew's Hospital for the van den Bergh estimations.

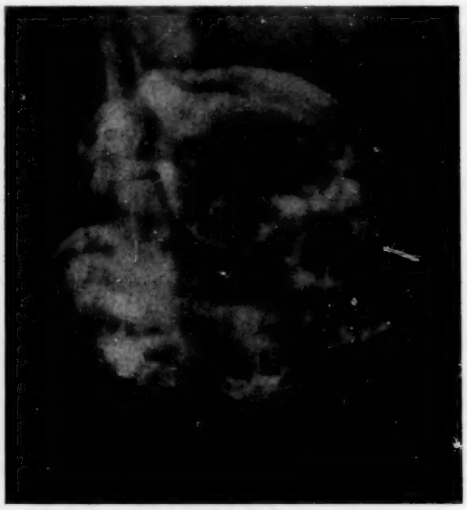
[2] The presence of abnormal pigments in the serum, other than bilirubin, is very uncommon; but it might be expected that the colour of such pigments would concentrate in a histamine skin wheal. We found this in a case of carotinæmia in which the concentration of bilirubin was normal.

LITHOPÆDION IN A CENTENARIAN

By Loh Guan Lye, L.M.S.
of the General Hospital, Singapore

About 212 cases of lithopædion have been reported during the last 340 years.[1] The length of time during which the one here reported was retained makes the present case of unusual interest.

A wizened old Chinese woman came to the Singapore General Hospital in March, 1936, complaining of abdominal pain. She said that this arose from a lump that had been present in the abdomen for 60 years but had given no symptoms until three months previously. Asked about the lump, she said that it was a baby, and she gave the following history. Menstruation commenced when she



Radiogram of lithopædion: showing skull (indicated by arrows) and vertebræ.

was 13 years of age. She was married at 18. Her first pregnancy occurred when she was 30, and a healthy female child was born after a normal labour. At 40 she had a second pregnancy which proceeded normally until near full term, when severe abdominal pains occurred. These she thought were labour pains, although very intense. A Malay woman was called in to massage the abdomen, after which all fœtal movements ceased and no child was born. Pain disappeared within a month. Menstruation started again a year later, and continued regularly until the age of 70.

Examination showed a lax abdominal wall, through which a hard, nodular, tender mass could be felt. This lay near the centre of the abdomen, but was freely movable through a range allowed by the pedicle which connected it to the pelvis. No further information could be gained by examination of the stenosed vagina or of the rectum. The radiogram shows a rounded shadow in which the skull and vertebral column of a fœtus are readily recognised. Her pain was evidently not severe, and after reassurance she went home.

There must remain a little doubt as to the exact age of the mother and of the fœtus. The patient maintains that she did not reach the menopause until 30 years ago, when she was 70. This raises a suspicion that she may have exaggerated her age, and there is no birth certificate to confirm it. It is suggested that the radiographic shadow is the result of an ectopic pregnancy that went to term some 60 years

[1] Bland, P. B., Goldstein, L., and Bolton, W. W.: Surg. Gyn., and Obst., 1933, lvi., 939.

ago, but its size gives little indication of the degree of maturity of the fœtus which gave rise to it, for the death of a fœtus is always followed by shrinkage.[3]

My thanks are due to Mr. J. K. Monro for permission to publish this case, and to Dr. D. Ross McPherson for the radiograph.

TREATMENT OF PAROTID FISTULA

By James Cook, F.R.C.S. Edin.
DEPUTY MEDICAL SUPERINTENDENT AT THE BIRKENHEAD MUNICIPAL HOSTEL

Fistulæ of the parotid gland appear to vary greatly in their tendency to spontaneous cure. This note records a somewhat chronic case of the condition and outlines what appears to be a satisfactory operation.

A boy, aged 10, was admitted to Birkenhead Municipal Hospital on Feb. 11th, 1936. Seven years before a left-sided parotid abscess had burst and had been followed by a fistula, which continued to discharge clear fluid until his admission to hospital. As the child grew up the condition became an increasing source of annoyance, since he could not partake of a meal without soaking his neckwear; even the thought of food brought a copious flow of saliva from the external opening.

Examination.—The patient was fairly healthy and well built. The tonsils were slightly enlarged and there were a few carious teeth. He was given an orange to eat and there was a profuse flow of clear, limpid watery fluid from a small orifice over the left parotid gland. Between meals there was practically no discharge. The entire secretion of the gland could be made to enter the buccal cavity by external pressure over the opening. Palpation excluded a salivary calculus.

Operation (Feb. 17th).—The fistulous track was excised and a portion of fascia lata carefully sutured to the parotid capsule, and the wound closed. For the next few days the patient was kept under the influence of atropine with a view to diminishing the salivary secretion and so promoting healing of the wound.

Seen almost three months after the operation the wound was entirely satisfactory and there had been no recurrence of the discharge The mental outlook of the boy had greatly improved.

I have to thank Mr. R. A. Grant for permission to publish these notes.

[3] Emmert, F.: Ibid., 1932, lv., 646.

MEDICAL SOCIETIES

ROYAL SOCIETY OF MEDICINE

SECTION FOR THE STUDY OF DISEASE IN CHILDREN

At a meeting of this section held on May 22nd the chair was taken by the president, Sir Lancelot Barrington-Ward, and a paper on

Congenital Deformities of Mechanical Origin

was read by Mr. Denis Browne. Present teaching, he said, varied between a flat denial and a rather deprecating acknowledgment that pressure in utero plays a part in causing deformity. With a child in the normal position in the womb, dimples were produced wherever a bony point was in contact with the uterine wall. Dimples, in his opinion, were the result of compression of tissues, followed by adhesions. They were "the footprints on the lawn" of the detective story. They were absent if there was no mechanical pressure, and increased if pressure was increased. Abnormal positions produced dimples in other parts. The feet were the most exposed to pressure of any part and if abnormally placed were curved into the talipes position with a collection of dimples over the convexity. Sometimes a further set of abnormal dimples was found near the toes of the abnormal foot corresponding with those on the normal hand—showing that the foot had taken pressure on its dorsum as the hand did always. When little toes were malpositioned because of talipes a dimple would be found just where the toe had rested on the other foot. A case of postural torticollis showed a depressed ear due to the pressure of the shoulder. One child he had seen folded up so that its feet fitted into its face; it had dorsiflexed halluces and an abnormally depressed nose, and the two fitted precisely. Acrocephalic syndactylism might well be due to pressure of the hands against the head. Congenital dislocation of the hip (due to pressure on the knee) and congenital fracture of the tibia were best explained by mechanical pressure. Dimples were found in the latter just where they would be if the leg had been folded and broken across the other leg. Club-hands belonged to this category: the hand was bent back owing to the absence of ulna, and dimples corresponded.

If the limbs of an adult were kept closely confined for a long time the tissues degenerated and the limbs became stiffened and atrophic. Similar changes were found in deformed babies which had been compressed in a normal position. When abnormal position was added to abnormal mechanical pressure, muscles and joints were bad and the cases were very hard to treat, although the deformity was the same to look at as in other cases. Spina bifida combined with talipes and paralysed legs was due to compression just as the fœtus was starting to bend from a flat plate; the plate therefore failed to close and the limb buds grew upwards instead of forwards, so that the feet were jammed on the shoulders. (Mr. Browne showed a film demonstrating how such a child folded up with straight legs; in one case the deformed feet fitted perfectly into one another; in another they had been protected by the head.) Dimples, he continued, were sometimes found over misplaced coccyges. Amniotic bands had only been an obvious factor in one case he had seen. Spasmodic muscular pressure caused another group of deformities. A normal hip might be dislocated by such spasm. Pressure sores had been seen on new-born babies.

More arguable were the effects of increased hydraulic—as opposed to mechanical—pressure. This would affect the blood pressure, so that the tissues near the heart and sheltered by the elastic recoil of the chest received a fair amount of blood but distant parts were starved, so that arms and legs would be atrophic. In hydramnios the baby could adopt positions impossible in a normal uterus and there should be no dimples or normal pressure signs. Children were born fulfilling these conditions—for example, a child with stiff extended hips, atrophic arms and legs, and no dimples or normal mouldings. Veterinary surgery knew a congenital deformity of lambs with stiff and atrophic limbs; shepherds foretold this by the large belly of the ewe

(hydramnios). This was an interesting corroborative point.

Deformities not due to mechanical conditions included local failures of formation, ring constrictions, and congenital amputations. Sprengel's shoulder was a failure of migration, like an undescended testicle, and showed no dimples. Achondroplasia was quite different. Of the other explanations put forward for the conditions now ascribed to pressure none were convincing.

Asked if there was any correlation of deformity with fœtal movements, Mr. Browne said he had had several cases of deformity where the mother had felt less movement than usual, but he thought the sensations were produced by knocks of the child's hands and not by kicks. The hands were usually free in these cases. He could not offer an explanation of the presence of six fingers.

Miscellaneous Diseases

Dr. REGINALD LIGHTWOOD reported, on behalf of Drs. N. F. Maclagan and J. G. Williams and himself, a case of *persistent acidosis of unknown cause*. The child showed surprisingly hypotonic muscles and fair nutrition when first seen, but later became gravely ill with bronchitis, diarrhœa, and vomiting. A study of six cases showed a syndrome of wasting, muscle hypotonia, a trace of albuminuria, occasionally blood-cells and bacilli in the urine, and coarse calcium deposits in the boundary zone of the kidney. There were no other disorders of the kidney, and all cases so far seemed to have died with a terminal infection. The case presented had appeared to resemble this syndrome and had shown persistent acidosis. After treatment by rectal saline and glucose the child had recovered.—Dr. MACLAGAN pointed out that the child had had a severe acidosis which appeared to break all the ordinary rules and for which no cause was apparent.—Dr. DONALD PATERSON said the syndrome was recognisable, once seen. Foreign body in the kidney was strongly suggested by an ailing, vomiting child between 6 and 12 months of age, with albumin and large lymphocyte-like cells in the urine. The prognosis was very bad.—Dr. LIGHTWOOD emphasised the importance of keeping patients free from infections and from overdosage with vitamin D. The kidney condition resembled D-poisoning in animals, but in the cases recorded the children had not had D-concentrates. Alkalis might be given to correct the acidosis.

Dr. REGINALD WILSON (for Dr. Paterson) showed a case of *actinomycosis of the lung* involving the chest wall in a girl of 9. The child had been given vaccine and had apparently recovered.—Dr. PATERSON pointed out the rarity of recovery in such cases.—The PRESIDENT said the only cases of actinomycosis he had seen recover were those in the right iliac fossa.—Dr. K. H. TALLERMAN said that in a case he had known the patient had been apparently well for three years but was now in hospital going rapidly downhill.

Dr. WILSON also showed a case of *congenital blindness* in a male aged 5 months. An uncle and three cousins had all been blind and died young. All the affected members of the family were males and half the females of the family were producing defective children. An eye had been removed from one of the cousins and showed gliosis of a detached retina which was not as much as was usual in a glioma. Dr. Greenfield preferred to call it an exudative, proliferative choroiditis. The diagnosis lay between glioma, pseudoglioma, and the familial hereditary angiomatous retina.—Dr. E. A. COCKAYNE said that glioma retini was never a sex-linked recessive.

Dr. T. COLVER (for Dr. Paterson) reported a case of *ethmoidal suppuration* with orbital involvement; external drainage had led to rapid improvement.

Dr. G. H. NEWNS (for Dr. Paterson) showed encephalograms of a case of *subarachnoid hæmorrhage* in a child of 7 who had fallen on his head a month earlier. No evidence of subdural hæmorrhage had been found. The trauma must have ruptured a small aneurysm which had leaked for a while, then bled more actively and clotted up.

Dr. TALLERMAN reported a case of *infantile myxœdema* in a girl of 5 who had appeared normal up to the age of 2. The child was now much the same size as at that age. Acquired thyroid deficiency was very rare. The radiograms showed delayed ossification of femoral heads.—Dr. PATERSON had only seen one case: a small boy who developed an adenoma of the thyroid at the age of 4, and became normal on thyroid treatment.—Dr. COCKAYNE also had only seen one case. The prognosis was much better than in a cretin.

Dr. P. R. EVANS (for Dr. Wilfrid Sheldon) showed a case of *pneumothorax and bronchial collapse following chest injury* in a girl of 9. A car wheel had passed over the chest and fractured the right third and fourth ribs. Bronchoscopies to enable air to enter the lung had been partially successful, and the patient had been able to return to school and to win a 100-yards race; the heart was still to the right of the sternum and the right lower and middle lobes collapsed. The collapse of the bronchus had protected the lung from infection. Lobectomy did not seem indicated.—Dr. PATERSON asked if carbon dioxide and oxygen had been given.—Dr. EVANS replied that the accident had occurred three years before and there was little chance now of aerating the remaining lobes.

Dr. J. V. BRAITHWAITE showed a case of *myopathy* in a girl aged 5 with no family history and a history of not having walked until 3, which was against pseudo-hypertrophic muscular dystrophy.—Dr. COCKAYNE thought this condition occurred sometimes in girls and might be either a recessive or a sex-linked recessive.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY

AT the last meeting of this society, held in Leeds, with Dr. RUTH NICHOLSON, the president, in the chair, a number of cases were reported.

An Unusual Metastasis

Mr. A. GOUGH described a case of carcinoma of the cervix uteri with metastases in the glands of the neck.

The patient, a 9-para aged 66, presented herself in February, 1935, because of a discharge of blood, which had already continued for six months. A typical cancerous excavation of the cervix was found. The growth appeared to be invading the base of the bladder, and it was classified as Stage III. Histologically it was found to be a squamous carcinoma of an ordinary cervical type.

The patient was treated with radium by the Stockholm technique. She received three applications—3200 mg.-hours on each occasion. The immediate result was good.

She came up for examination after three months and again at the end of six months, and everything was found satisfactory. At the end of twelve months there was still no sign of recurrence in the pelvis, but enlarged glands were found in both subclavian triangles. On the right side there was a gland the size of a cherry; on the left side it was the size of a bantam's egg, and it was obviously adherent to the subclavian vessels. The gland was removed from the right side of the neck, and section showed the structure of a squamous carcinoma of the same type as the uterine growth. The patient was sent to the radium department for treatment of the neck.

Mr. Gough thought the cancerous deposits in the glands of the neck might reasonably be supposed to be metastases from the uterine growth, for they were of the same type and there was no evidence of any other primary source. The disease had presumably travelled along the thoracic duct. This was the first time he had seen such extension to the neck in a case of cancer of the uterus, and he did not remember ever to have read of it. It had, however, occasionally been observed in connexion with cancer of the ovaries and other abdominal organs. Other observers had commented on the greater frequency of metastases after the radium treatment of cancer of the cervix. The treatment, it seemed, succeeded in abolishing the growth within a certain radius, but there might be continuing spread at the periphery, where the intensity of the radiations had been insufficient to destroy the cancer cells.

Mr. ERIC STACEY (Sheffield) was inclined to think that carcinoma sometimes spread by way of the blood stream, metastatic emboli being produced as an effect of the radium treatment.—Mr. B. L. JEAFFRESON had seen a case of first-stage carcinoma of the cervix, in which metastases had already extended to the bronchial glands, as demonstrated by radiography.

Tuberculosis of the Uterus

Mr. Gough also reported a case of tuberculosis of the pelvic organs.

The patient, an unmarried woman of 21, complained of increased menstrual loss for the past ten months, the periods lasting as long as a fortnight, although the intervals were clear. There was no pain and no other symptom. Her general condition was good; she was well nourished, and did not appear anæmic.

On abdominal examination nothing was made out except general tumidity in the lower zone. By the rectum it was possible to feel a mass the size of a large orange. It was inseparable from the uterus, and several prominences could be felt on its surface. Its mobility was decidedly less than that usually found in a case of myoma of the uterus. Nevertheless, in spite of the youth of the patient, a provisional diagnosis of myoma was made, and operation was performed on April 3rd.

The abdomen was opened by a left paramedian incision. Universal adhesions were found among the pelvic organs, and on separating these, some ounces of yellow serous fluid escaped. Many of the peritoneal surfaces were seen to be studied with tubercles. The uterine appendages formed irregular swellings on both sides, and the uterus itself was considerably enlarged. From this enlargement, and taking into consideration the menorrhagia, it was concluded that the uterus must be involved in the disease. It was therefore removed, with both appendages. When the uterus was cut open, it was seen that the enlargement was mainly due to a thickening of the myometrium. There was also a tuberculous endometritis. The upper part of the corporeal endometrium was studded with yellowish tubercles. The characteristic structure was seen in microscopic sections.

Mr. Gough considered that tuberculosis of the Fallopian tubes was not uncommon, but in his experience it was rare to find tuberculosis of the uterus. Here he was leaving out of consideration the scattered miliary tubercles which are seen on the outer surface of the uterus in cases of tuberculous peritonitis. This was only the second occasion on which he had removed a uterus for tuberculosis. The first case was very similar to the present one, and the patient, refusing sanatorium treatment, had died six months after operation from general tuberculosis.

Mr. STACEY believed that tuberculosis of the genital tract was commoner than was generally supposed. During the past three months he and his colleagues in Sheffield had found tuberculosis in nine cases—proved by section of curettings.—Mr. ST. GEORGE WILSON (Liverpool) was of opinion that the endometrium was as a rule also involved in cases of tuberculous salpingitis. In treatment he preferred X rays to surgery.—Prof. MILES PHILLIPS (Sheffield) thought that if careful inquiry were made a history suggestive of tuberculous peritonitis in childhood could often be obtained. The trouble might lie dormant and be lit up after marriage.—Mr. GOUGH, in reply, expressed surprise at the high incidence which was apparent in Sheffield as compared with Leeds. He stated a personal preference for operative treatment.

Mr. W. R. ADDIS read a note on impaction of the bladder, and Mr. D. W. CURRIE reported a case of hæmorrhage into an ovarian tumour at the third month of pregnancy.

REPORTS AND ANALYSES

PATZENHOFER GENUINE GERMAN LAGER BEER (LIGHT)

(JOHN C. NUSSLE & CO., LTD., 21, SOHO SQUARE, LONDON, W.1. SOLE CONCESSIONAIRES FOR GREAT BRITAIN, I.F.S., AND EXPORT)

THIS well-known beer is of the Pilsener Lager type, and is brewed and bottled at the Patzenhofer Brewery, Berlin. When analysed the following results were obtained:—

Original gravity before fermentation	1049°
Present gravity	1009°
Alcohol by volume	5·18 per cent.
Equivalent to proof spirit	9·03 ,, ,,
Matters in solution	4·19 ,, ,,
These include—	
Carbohydrates (maltose)	1·41 ,, ,,
Dextrin, hop extract, &c.	2·37 ,, ,,
Proteins	0·23 ,, ,,
Mineral matter	0·12 ,, ,,
Acidity (as acetic acid)	0·06 ,, ,,
Carbon dioxide	1710 c.cm. per litre.
Sulphurous acid	2·24 grains per gallon.

The beer is very pale in colour and has an agreeable palate typical of a high-class export lager, and with a less pronounced hop flavour than English bottled beer. About two-thirds of the original gravity was lost during fermentation. The content of carbon dioxide is normal for a bottled beer; the sulphurous acid present is negligible, and was derived from the raw materials used in brewing. The beer is brilliant and entirely free from any sediment.

HOSPITAL COÖRDINATION AT LEEDS.—A scheme for the coördination of the voluntary and municipal hospitals is being evolved at Leeds, and a committee has been appointed by the city council to meet representatives of the voluntary hospitals.

REVIEWS AND NOTICES OF BOOKS

The Medical Annual

By Various Contributors. Edited by H. LETHEBY TIDY, D.M. Oxon., F.R.C.P., and A. RENDLE SHORT, M.D., B.Sc., F.R.C.S. Fifty-fourth year. Bristol: John Wright and Sons, Ltd.; London: Simpkin Marshall Ltd. 1936. Pp. 845. 20*s*.

To decide what book is most worthy to be called the general practitioner's bible might prove no easy task but the Medical Annual would certainly be in the short list. The 1936 edition contains much new and important material. Sir Weldon Dalrymple-Champneys writes on undulant fever and Sir Leonard Rogers, F.R.S., adds a note on atypical forms of that disease. Dr. A. H. Douthwaite contributes articles on gout and chronic rheumatic disorders. Another newcomer is Mr. K. H. Pridie, who collaborates with Prof. Hey Groves in six articles on orthopædic subjects. The article on therapeutics, by Dr. Philip Hamill, discusses among other controversial matters the vexed question of the barbiturates. Mr. Sampson Handley writes on diseases of the breast, and Dr. John Underwood on the school medical service. There is a long and authoritative article by Sir Morton Smart on manipulative surgery; this should inspire the practitioner who reads it to be less timorously conservative than hitherto in his treatment of minor but disabling injuries to bones and joints, with benefit to his patients and, incidentally, to his own professional reputation. With the exception of two writers on para-medical subjects, the only notable absentee among the contributors to this year's Annual is Dr. Robert Hutchison. The editors, as usual, are also contributors—Dr. Tidy writes on various intra-abdominal disorders, and Mr. Rendle Short contributes more than a dozen articles on various aspects of abdominal surgery, including one on adrenalectomy. Much recent work on blood diseases is described, including a reference to the treatment of hæmophilia with Russell's viper venom, now available on the market. An interesting article is that on malaria and its treatment with atebrin and atebrin mussonate, and a sensible note deals with the diet of athletes. Attention is drawn to the recently noted association between gall-bladder and heart disease, and there is a long article on the all-important pituitary. The increasing potentialities of surgery, especially that of the thorax, are discussed. We learn that, in the last decade, the mortality of lobectomy has fallen from 80 to 14 per cent., and that pulmonectomy is now quite practicable. "Chronic interstitial mastitis" in patients under forty is said to respond well to treatment by X rays and ovarian extract. Certain neoplasms of the lung also respond well to radiation. Otosclerosis is being treated with thyroxine. Radiology is proving increasingly valuable in cardiology, antenatal examination, and even in the differential diagnosis between pneumonia and acute abdominal conditions. Cyclopropane is held to be perhaps the most promising of the new anæsthetics, but vinethane and supersaturated ether are being tried out with success.

These are a few of the interesting pieces of information taken at random from this book. The editors note with satisfaction in the introduction to the Annual that the material gleaned from another year's medical literature shows "that there have emerged an unusually large number of comparatively simple methods of new treatment, for a great diversity of ailments, well worthy of the attention of every practitioner who desires to relieve his patients safely, quickly, and pleasantly."

A Textbook of Surgery

By American Authors. Edited by FREDERICK CHRISTOPHER, B.S., M.D., F.A.C.S., Associate Professor of Surgery at Northwestern University Medical School; Chief Surgeon, Evanston (Illinois) Hospital. London: W. B. Saunders Co., Ltd. 1936. Pp. 1608. £2 2*s*.

THIS text-book of surgery, designed for the use of undergraduates, is interesting from several points of view. It deals with the whole of surgery except that of the special senses, and although it contains over 1600 pages it has been kept to a reasonable size. Its most remarkable feature is the number of contributors who include men of world-wide reputation: Henderson, Smith-Petersen, Adson, Rankin, Balfour, Blair, Bunnell, Graham, Ivy, Orr, among others. The editor has selected them not only because of their special knowledge of the particular section of surgery about which they write, but also because they are, for the most part, teachers who are known to possess gifts of exposition.

The result is a book which is thoroughly up to date, and, moreover, makes attractive reading. The extreme subdivisions of subjects show how very specialised is surgery in America to-day. For example, there are separate authors for femoral and inguinal hernia; five deal with the rectum, and seven with the stomach. No less than nineteen authors write on fractures of the limbs. One gathers that the one who describes fractures of the shaft and upper ends of the tibia and fibula is not considered so great an authority on fractures of the lower ends of these bones; the coöperation of two experts has been deemed necessary on the question of fractures near the elbow-joint, and the same applies to fractures of the phalanges and metacarpals. It is not astonishing that the contributions are uneven in quality. Among the inadequate sections is that on tuberculous disease of the hip, which though it may be a rapidly disappearing disease still merits more notice than seven lines of print for its pathology and twelve and a half lines for its symptomatology and treatment combined. That this article is illustrated by some good pictures of the not very common operation for extra-articular fusion of the joint only emphasises the omission of a full account of the disease. The sections on Pott's disease of the spine and on diseases of the tongue are also too brief. The good sections far outnumber those which do not present their subject in a way suitable for the undergraduate. A useful feature is the break away from tradition in arrangement; to give only one example, painful affections of the lower back are discussed together in a most effective way, instead of being treated in separate compartments according to the anatomical lesion. The modern outlook is presented in such a manner that life is infused into the dullest subjects and the reader's interest is held throughout.

The book cannot fail to stimulate all who read it. Students will use it as an adjunct to a practical course of demonstrations or lectures in surgery, and surgeons and practitioners will wish to possess it because it contains first-hand teaching by many leaders of surgery.

The Medical Dictator

And Other Biographical Studies. By Prof. MAJOR GREENWOOD, F.R.S., D.Sc., F.R.C.P. London: Williams and Norgate Ltd. 1936. Pp. 213. 7*s.* 6*d.*

Prof. Major Greenwood has already earned our gratitude by his introduction to the study of epidemiology entitled "Epidemics and Crowd Disorders." The literary grace, the learning without parade, and the spontaneous use of epigram displayed in that book, will all be found in his new volume of essays. Each chapter in the Medical Dictator is composed of acute desultory musings on six men of an absolutely different standing in their common profession of medicine and in their influence on society. This reviewer does not propose to select one chapter more than another as worth attention; they should all be read—a pleasant task, though the easy reading implies hard writing.

The men introduced to us are Galen, Freind, Peter Mere Latham, William Farr, Pierre Louis, Osler, and Arthur William Bacot. Galen, for some 1500 years the medical dictator of the civilised world, is put in his place as an overrated thinker, who none the less had influence for good, probably in an unintentional manner. Freind, the author of the "History of Physick," is an unfamiliar name to most of us, and such references as may occasionally be seen allude to him as a Latinist, in which character he would make a sure appeal to his biographer. Prof. Greenwood says of him, in reference to his diagnostic and therapeutic methods, that "he is as clear as Macaulay and he has demonstrated completely that he was wholly destitute of the qualities which make a scientific investigator," adding that he must not be sneered at for ignorance of things which have been discovered since his death. But the little biography closes with the suggestion that Freind owed the regard in which he was held not to his learning but to his hatred of pretence, the real reason why Freind was beloved "and why a gracious memory of a stout-hearted, enjoying English gentleman and scholar has come down to us," being his intolerance of dictatorship. He is bracketed with Osler and Allbutt of our own generation in a genuine affection for the humaner letters, and with P. M. Latham for his scorn of affectation.

In the chapters on William Farr and Pierre Louis Prof. Greenwood is dealing with pioneers in the section of learning which he himself adorns. He finds Farr to have arrived at his general deductions by methods that a properly equipped actuarial mathematician would regard with horror, but none the less he endorses an official description of him attributing to his work great services for the advancement of national health. The numerical method of Louis is closely criticised, and the difficulties to be overcome in establishing a scientific system in diagnosis and prognosis in the manner of which Louis hoped for are recognised. But Louis did not obtain the support of the medical profession, and the systematic use of statistical methods in clinical medicine never entered into the routine of French hospital work. This fact provides Prof. Greenwood with the caustic commentary that "if only Louis had succeeded in really commanding the support of the great clinical teachers of Paris, why, we should have *had* to do something about it in England." Osler is sympathetically if not over respectfully treated, and an amusing piece of leg-pulling is retailed where Osler, the hardened joker, is himself the victim of "Popsey" Welch. The closing chapter is a biographical sketch of Bacot, the great entomologist; it is a record of an intimate friendship which provides at the same time a vivid picture of Bacot's wonderful technique.

Prof. Greenwood succeeds in these charming essays in justifying his view that the lives of all his subjects give a favourable impression of human nature; but we feel that he finds human nature to be frequently frail, and this estimate escapes him in the guise of quotation and quip.

The Diagnosis and Treatment of Pulmonary Tuberculosis

By JOHN B. HAWES, M.D., President of the Boston Tuberculosis Association; and MOSES J. STONE, M.D., Assistant Professor, Diseases of the Chest, Boston University School of Medicine. London: Henry Kimpton. 1936. Pp. 215. 12*s.* 6*d.*

A SHORT book of this kind, which is addressed to practitioners, students, nurses, and social workers, cannot be made complete, and the best work for its purpose is one which combines lucid exposition with correct emphasis of those aspects of the subject which, in the light of recent knowledge, are held to be the most important. Judged by these standards this is a first-rate book. In the opening chapters the authors point out that evidence of active disease which is not at once volunteered by the patient may often be obtained by careful history-taking. Physical examination of the chest is discussed adequately but refinements of detail, especially in percussion, are discouraged, a few honest persistent râles being regarded more seriously than much doubtfully impaired resonance. Although the study of physical signs should not be neglected, the writers note that radiology is now taking such an important place in the routine examination of the lungs that percussion must take second place in the detection of areas of consolidation. Tidal percussion of the bases is unnecessary when the movement of the diaphragm can be seen so much more clearly by screen examination. "Do not waste time over *non-essentials*. Much time has been wasted, for instance, in percussing out the narrow strip of normal resonance, known as Krönig isthmus"; this is an extract typical of the practical common sense which pervades the book.

In the chapters on treatment the sanatorium is described as being the best place for the great majority of early cases; it should be situated relatively near the patient's home. It is conceded that the much vaunted climate of Colorado may offer something to the consumptive who can afford to go there, as the surroundings are certainly more beautiful and the weather more pleasant than for example in New England, but it is emphasised that quite satisfactory results are obtained near sea level in the Eastern States. In contrast to some recent American writers, the authors are not obsessed with the risks of adults catching tuberculosis from one another. Infection of children should be rigorously avoided, but although precautions should not be neglected in adult contacts the problem here is considered to be much more one of hygiene than infection.

Among the concluding chapters that on rehabilitation in pulmonary tuberculosis deserves special mention; occupational therapy in the sanatorium, the sheltered workshop, and the farm or industrial colony all have a place in the struggle against tuberculosis. The Papworth scheme is looked on as providing the ideal after-care and this is one which should have many

imitators. There is room for criticism only in the reproduction of some of the X ray films, but it would be ungrateful to expect higher value than is here given for such a modest sum as is charged for this excellent book.

MEDICINE AND THE LAW

Medical Officer's Action Against Mental Hospital

THE action brought by Dr. Hugh Charles McManus, formerly assistant medical officer to the Park Prewett Mental Hospital near Basingstoke, ended unsuccessfully last week after several days of litigation. He claimed damages under heads so various as conspiracy, libel, negligence, breach of contract, and wrongful dismissal. He sued (*a*) Dr. R. F. B. Bowes, the former medical superintendent of the Park Prewett Hospital, (*b*) the late Duke of Wellington as chairman, and two other defendants as members, of the hospital visiting committee, (*c*) the clerk to the hospital, and (*d*) the clerk to the Hampshire Joint Mental Hospital Committee. He complained that Dr. Bowes had wrongfully induced the hospital authorities to break their contract with him. The plaintiff's case was eloquently opened with allegations which the different defendants were unlikely not to resist. Dr. McManus was represented as an enthusiastic and enterprising young medical officer who, on coming to the Park Prewett Asylum in 1923, found it run on mechanical lines—not a single modern text-book, no scientific instruments, the clinical examinations taking place in the wards, no pathologist, X ray treatment administered by the resident engineer who was not a radiologist, post-mortem examinations carried out by an unqualified person, and so on. Dr. McManus, it was suggested, made his reforms at the expense of his popularity. He altered the inadequate system of keeping records and he won his fight for a separate room for clinical examinations. His zeal was unappreciated and he was subjected to petty annoyances. His health suffered from the strain of obtaining the diploma of psychological medicine: the matron used to give him a cup of beef tea at 11 A.M., but, when he gained his diploma, she was forbidden to do so. There was an objectionable slander about a nurse being seen to leave his room in the evening; it was even said that he drugged himself. His health finally broke down. He was told to leave, and, since October, 1927, he had been unable to obtain further appointments.

All these allegations the defendants denied; they merely said that Dr. McManus, if he were entitled to any notice at all, was given proper notice to terminate his engagement. At the closing of the evidence for the plaintiff, the case against Dr. Bowes was found to be unsubstantiated. Eventually Dr. McManus withdrew all his charges and claimed only damages for wrongful dismissal and the return of his superannuation contributions. Mr. Justice Macnaghten, who was trying the case with a special jury, thereupon ruled that it was undesirable that the same jury, after hearing so many matters which were not now being proceeded with, should be asked to determine the lesser issues which remained. It might be hard for the jurors to dismiss from their minds the copious evidence which was now largely irrelevant. He therefore dismissed the jury and announced that a fresh jury would be sworn in for deciding the remaining question whether Dr. McManus was entitled to three months' notice or not. On this point the plaintiff's counsel argued that Section 189 of the Public Health Act of 1897 (giving express authority to dismiss an officer "at pleasure") did not apply: no such words were to be found in Section 276 of the Lunacy Act, 1890: the whole policy of the Asylum Officers' Superannuation Act, 1909, indicated some permanence of tenure for the staff of mental hospitals. On the other hand, the defendants contended that Section 276 of the Lunacy Act justified the hospital committee in revoking the appointment of Dr. McManus at its pleasure and without assigning any reason; if so removed, he could not, of course, draw the salary and emoluments of the office; his position was not affected by the Local Government Act, 1933, which enabled local authorities to agree that notice should be given to a medical officer.

When the case was ready to proceed afresh under the new jury, Dr. McManus was unfortunately ill and unable to give evidence on the question of his dismissal. The judge thereupon gave his decision upon the arguments. Observing that neither at the time of the plaintiff's engagement nor at any other time was there any mention of notice, the court decided that he was employed at the committee's pleasure; the terms of his engagement implied that he could have no complaint if the committee told him to leave. With regard to the claim for the return of his superannuation contributions under the 1909 Act, he could only be entitled to have them back if he were not entitled to a superannuation allowance. He had claimed superannuation allowance in an application to the Home Office. The hospital could not repay the contributions while that claim was pending. At the date of the writ in 1933 Dr. McManus was not entitled to receive the deductions made under Section 10 of the 1909 Act; the claim for superannuation allowance was finally decided against him by the Home Office and the court thought the question could not now be reopened. The result was that Dr. McManus lost at all points and the whole of his actions were dismissed with costs against him.

Complaint of Wrongful Certification

The Sunderland town council has lately discussed a complaint that a sane boy was wrongly certified and sent to the borough mental hospital. It seems to be agreed on all sides that the boy was backward and undeveloped. It is alleged on behalf of his parents that he needed nourishment and that his tonsils should have been removed but that there was no occasion to send him to an asylum. It is said on the other side that he was a boy of 17 with the mentality of a child of 10 or 12 and that he left the mental hospital in a condition greatly improved by treatment. The town council decided by 11 votes to 7 (the majority of the councillors abstaining from voting) to ask the Minister of Health to hold an inquiry into the circumstances. The matter being thus sub judice, further statement or comment may be postponed. It may, however, not be improper to record an expression used in the council chamber by a speaker who referred to "the stigma which this boy will have to carry for the rest of his life." A Royal Commission suggested certain reforms which were afterwards enacted in the Mental Treatment Act of 1930. Its report reminded us that the proper treatment of doubtful cases in mental hospitals is in the best interests of the patients. It may be hoped that some day our social standards will be so changed that treatment for mental ailments, great or small, will be regarded as no more shameful than treatment for mumps or measles.

THE LANCET

LONDON: SATURDAY, MAY 30, 1936

ANXIETY ABOUT HOSPITAL FINANCE

IN his introduction to that modern epic, Evans and Howard's "Romance of the British Voluntary Hospital Movement" (London, 1931), Sir W. ARBUTHNOT LANE spoke of a new era ending the hygienic chaos with which the voluntary hospitals have been striving for centuries to deal. He was referring to the effect of the Local Government Act in opening vast new sources of revenue to historic institutions—which were finding it increasingly difficult to carry on—by making it possible for the municipalities to contribute without interfering with their voluntary character. The great voluntary hospitals, he said, are called upon to lead in a way they have never before been called upon to lead in their history, for the new law enables the people to organise the followers without any fear of overlapping, conflict, or, worse still, the deterrent stigma of pauperism which attached to the old infirmaries. Nevertheless the Hospitals Year-Book, which has just appeared[1] for the sixth time, betrays some anxiety about the position of the voluntary hospitals.

There is no question about the extent or the urgency of the work that these hospitals are doing; in the year 1934 which is reviewed 1,300,000 patients were treated in their wards and 6,000,000 patients in their out-patient departments, being an increase of 60,000 and 285,000 over the numbers treated in the preceding year, an increase described in the Year-Book as normal. At the same time the difference between a 100 per cent. occupation of beds in some of the large hospitals and a 10 per cent. occupation in some of the small ones suggests that due weight has not been given to the factor of transport facilities, and the lesson of overcrowding of large hospitals by patients from the country district has not been borne in mind. Mr. R. H. P. ORDE, the able editor of the Year-Book, expects no improvement in the situation until agreement has been reached about the proper place of the cottage hospital in the general health scheme of the country. Recalling the declaration in the Cave report of 1921 that the voluntary hospital system, which is peculiar to the English-speaking peoples, is part of the heritage of our generation, Mr. ORDE remarks that the future of these hospitals does not depend upon a brave phrase and a consciousness of their own integrity, but upon action of a kind to which they are by the nature of things unaccustomed and for which they are singularly ill-equipped. It was, he thinks, for this reason that in the Act of 1929 the voluntary hospitals figured only in one small section, inserted almost grudgingly at the last moment; and even the passing of that Act awoke them from their complacency for only a little time. It was not until June of last year that the British Hospitals Association at the Leamington conference set up a commission under Lord SANKEY to develop their policy and safeguard their future. This commission has asked the county councils and boroughs what they have done, in making provision for hospital accommodation under the Act, to consult with the voluntary hospitals. It seems that no more than 83 of the 146 authorities have set up voluntary hospital committees. Moreover, in 34 instances the formation of such a committee has been the end of the matter; only in 16 instances have joint committees been formed representative of the public authorities and the voluntary hospitals. The county areas in general are profoundly inactive.

Sir CHARLES HARRIS tells much the same story in his financial review. He is not dazzled by the magnificent net surplus of a million pounds on the maintenance account in the aggregate, for he demonstrates the existence of a numerous class of hospitals waterlogged by the accumulated weight of successive annual deficits. The day of high-pressure begging is, he thinks, gone; at any rate it is likely to obey the law of diminishing returns, and in many places the contributory schemes have their own management funds and reserves, so that what the hospital receives is in the nature of payment for services rendered. What most troubles him is the downward trend of the free legacy. The peak was reached with £20 per available bed in 1927–28, and the figure is now below £17. Expenditure on the other hand continues to rise; the average increase over the previous year was £3·1 per available bed, the largest component being under the heading of salaries and wages. The only prospect of reducing future expenditure lies, he thinks, in constructive economies, the possibilities of which are still unexhausted. But year after year a substantial minority of provincial hospitals refuse to adopt the uniform system for hospital accounts which would make comparisons valid and combined action possible. This stone-walling of purposive central effort is one of the unlovely characteristics of voluntaryism. Sir CHARLES HARRIS speaks of the complete absence of team spirit in a minority of units which goes far to destroy the value of the whole scheme.

[1] The Hospitals Year-Book 1936: an annual record of the hospitals of Great Britain and Ireland incorporating "Burdett's Hospitals and Charities." Issued under the auspices of the Joint Red Cross Council and the British Hospitals Association by the Central Bureau of Hospital Information, 12, Grosvenor-crescent, London, S.W.1, pp. 336, 10*s*.

CHOLANGIOGRAPHY

THE visualisation of the biliary ducts by direct injection of fluids opaque to X rays, in contrast to cholecystography by the recognised routes of oral or intravenous administration, has been done occasionally in selected cases for more than a decade. Tenney and Patterson[1] in 1922 investigated

[1] Jour. Amer. Med. Assoc., 1922, lxxviii., 171.

a case of external biliary fistula by injection of bismuth paste under pressure; the pyrexia, jaundice, and abdominal pain which followed were probably due to temporary blocking of the common bile-duct. Mallet-Guy, Beaupère, and Armanet [2] in 1927 used lipiodol for the same purpose, and in 1930 Ginsburg and Benjamin [3] reported a series of cases of post-operative biliary fistulæ in which the injection of lipiodol proved to be of much diagnostic value when X rays were taken immediately. In the absence of active infection of the bile-ducts they found such injections to be simple and safe when done under fluoroscopic control, and showed that if the common bile-duct is unobstructed, lipiodol injected into an external biliary fistula appears almost immediately in the duodenum; the intrahepatic bile-ducts were rarely outlined unless there was some organic obstruction of the common bile-duct. In 1930 W. B. Gabriel [4] described a case in which the common bile-duct had been drained by a T-tube following removal of a large stone; some three weeks later proof of the patency of the common bile-duct was obtained by the injection of lipiodol through the tube prior to its removal. A similar use of lipiodol through a tube inserted at operation for purposes of drainage has been reported by R. H. Overholt (1931), A. H. Kretchmar (1933), and Judd and Phillips (1933). J. Cosbie Ross [5] has recorded a considerable experience of lipiodol in these cases. On account of the rapidity with which lipiodol passes into the duodenum a small residual stone in the common duct is not likely to be shown unless it is causing obstruction. The lipiodol may be held up at the lower end of the common bile-duct, either through spasm of the sphincter of Oddi or to impaction of a stone; if it is spasm that causes the obstruction injection of atropine, followed after three-quarters of an hour by a further radiogram, may show that the lipiodol has passed into the duodenum. This condition of abnormal tonus of the ampullary sphincter, or biliary dyssynergia, is of importance; B. R. Best and N. F. Hicken [6] note that it may occur independently from cholangitis, stones, or duodenitis, and lead to hepatic neuralgia and the occasional persistence of symptoms after cholecystectomy. Direct injection into the common bile-duct is not the only way of using lipiodol as an aid to diagnosis in this region. It may be run into the gall-bladder after cholecystostomy in order to investigate the cystic and common bile-ducts. Chiraz and Lomon [7] have obtained excellent radiograms by its injection through cholecystostomy catheters; these may show, for example, gross distension of the common bile-duct from impaction of a calculus and dilatation of the intrahepatic bile-ducts from compression of the hepatic ducts by secondary carcinomatous deposits.

[2] Lyon. méd., 1927, cxl., 215.
[3] Ann. of Surg., 1930, xci., 233.
[4] THE LANCET, 1930, i., 1014.
[5] Brit. Med., Jour., 1932, i., 1026; THE LANCET, Feb. 1st, 1936, p. 251.
[6] Surg., Gyn., and Obst., December, 1935, p. 721.
[7] Presse Médicale, 1936, xliv., 300.

The most recent application of cholangiography was initiated by Mirrizi [8] who reported successful visualisation of the biliary ducts while the patient was on the operating table, the method adopted being the insertion of a T-tube into the common duct, the injection of lipiodol and an immediate X ray. Robins and Hermanson [9] now describe, with many valuable details, their results in 25 cases in which this technique was used. The patient is placed on the operating table with a metal tunnel holding a 14 by 17 film under his back. The abdomen having been opened the cystic duct is identified and clamped; then by means of a 30 c.cm. syringe and a No. 15 or 18 gauge needle, 20 to 25 c.cm. of Hippuran (a 40 per cent. aqueous organic iodine solution) are injected into the common bile-duct. The surgical team makes way for a portable X ray apparatus to be wheeled into position and an exposure is made. In six minutes the surgeon should be able to see the developed film, and may thus gain visual help in deciding whether or not the common duct should be opened. If, for instance, an obstruction due to the impaction of a calculus is revealed the duct is opened and the stone removed; a T-tube for drainage is inserted and by a further injection of hippuran (30 c.cm.) the surgeon can see if his efforts to remove the obstruction have been successful. Robins and Hermanson say that in 24 of the 25 cases examined in this way accurate visualisation of the condition present was obtained. The only contra-indication to the method seems to be acute infection of the biliary tract. A further interesting observation was that in each of the 4 cases in which the pancreatic duct was visible abdominal exploration showed chronic pancreatitis to be present.

Surgeons able to command the necessary facilities by the provision of a shock-proof X ray apparatus in the operating theatre should take note of this work. Cholangiography may evidently provide valuable assistance, not so much in the typical case of gall-stones, as where there is a history of jaundice, or where laparotomy shows a dilated common bile-duct, or in those difficult patients in whom an operation on the biliary tract has been performed previously and recurrent symptoms necessitate a further exploration.

STORAGE OF BLOOD FOR TRANSFUSION

IN Soviet Russia for many years the blood of corpses has been used for transfusion; yet the method is seldom mentioned in the medical journals of Western Europe and America. Lately YUDIN, surgeon-in-chief of the Sklyfasovsky Central Emergency Hospital in Moscow, has provided needful information by reporting in both English [10] and French [11] on a thousand transfusions performed with cadaver blood.

The idea of using blood from casual corpses for

[8] Bol. y trab. Soc. de Cirug. de Buenos Aires, 1932, xvi., 1133.
[9] Surg., Gyn., and Obst., 1936, lxii., 684.
[10] Yudin, S. S.: Jour. Amer. Med. Assoc., March 21st, 1936, p. 997.
[11] Judine, S.: Presse méd., Jan. 11th, 1936.

infusion into living human beings is at first thought repugnant, and though the distaste is purely sentimental it is easy to rationalise it. For example, we may urge the danger of infection and the possible toxic effects of hypothetical post-mortem changes in the blood. But M. G. SKUNDINA and S. I. BARENBOIM, working in the Sklyfasovsky Institute, seem to have overcome these and most other non-sentimental objections. They find that the blood must be taken from bodies in which life has not been long extinct; the limit of time after death for withdrawal is arbitrarily set at six hours in summer and eight in winter; moreover, death must have been sudden and preferably from an acute cardiac condition or electrocution. Using such corpses and withdrawing the blood through cannulæ inserted into the jugular veins with the body in the Trendelenburg position these workers find it to be sterile; they have demonstrated that the blood of the portal circulation is the first to become infected by organisms after death and that this is not tapped by the method used. Their inquiries also bring to light a further point of great interest. They find that blood abstracted in this way from the corpse of a person who has died suddenly coagulates almost at once but liquefies again in 1–1½ hours; this peculiarity they state to be shared by the blood of patients still living but in a state of profound shock. Blood taken from the corpse of a person who has died slowly, on the other hand, clots and remains clotted. This observation obviously calls for further investigations, and these are promised. YUDIN states that the decoagulated blood derived from the body a few hours after sudden death actually gives rise to fewer reactions than citrated blood.

At a temperature of 1–3° C. cadaver blood keeps well, and it has been successfully infused after a month's storage. By using cadaver blood YUDIN and his associates have been able to keep on tap an ample supply for all emergencies. To make available such a supply, however, calls not only for an ample supply of suitable corpses but also for a highly organised system. On both these considerations—leaving prejudice aside—it is unlikely that under present circumstances the practice will come into vogue in this country. And inasmuch as cadaver blood appears to have no advantage over that from living men and women, which is readily obtainable here, there seems to be no reason why it should. The question of the storage deserves none the less more attention than it has hitherto received. It is the custom in this country to infuse blood shortly after its removal, and for this purpose donors are called upon, often at considerable inconvenience to themselves, as required for individual cases. Yet there is no apparent reason why stocks of Group O blood should not be kept on hand in institutions performing many transfusions; or some central institution might serve large areas of the country with bottles or cans of blood as required. PALAZZO and TENCONI,[12] of Buenos Aires, are among the few that have recorded observations on the keeping properties of blood and its transmission, and blood sent by them from South America has been successfully infused by JEANNENEY and VIEROZ[13] in Bordeaux. The Argentine workers took the blood into citrate, centrifuged out the red cells and suspended them in a mixture of two parts of 3·8 per cent. citrate solution and five parts of either 10·3 saccharose or 5·4 dextrose solution. For infusion the red cell emulsion was given either alone or after recombination with its plasma. Whether any advantage attaches to this separation of red cells and plasma appears to be doubtful; the whole problem stands in need of further study.

GUY'S HOSPITAL REPORTS

THE present issue of *Guy's Hospital Reports* is a centenary number; for the first volume, its editor believes, appeared in 1836, although, as it was reviewed in THE LANCET dated Jan. 9th of that year, it would look as if we received an advance copy or as if it was actually available in the previous year. For a presentation copy the notice in our columns was, as Sir Humphry Rolleston suggests in his preface to the centenary number, not very kind, but we should remember that the Editor of THE LANCET was himself on the point of bringing out week by week under the heading of Hospital Reports just such observations as appear in this volume. For then, as now, a noteworthy feature of *Guy's Hospital Reports* is that the articles represent original work contributed solely to its columns and not printed elsewhere. In fact, as Rolleston remarks, "Archives" would convey better than "Reports" an indication of the contents. In this first volume appeared, for instance, a contribution on the thyroid gland by Wilkinson King and Astley Cooper so fundamental that they would probably have gone on to find the explanation of cretinism had not Cooper been so old and King so delicate. This is Sir William Hale-White's opinion in his article on Thomas Wilkinson King as the father of endocrinology. In the first volume, too, appears the most extensive account published of Bright's disease by the man who gave it his name, and in the second volume, along with further papers by Bright, is one by Addison on the Diagnosis of Pneumonia. In 1836 Hodgkin was still curator of the museum and lecturer on pathology at Guy's, and it was Wilks who proposed the eponym Hodgkin's disease for the enlargement of the lymphatic glands and spleen described by Hodgkin in 1832, and it was Wilks who wrote in the *Reports* many of the articles about Addison's work on disease of the suprarenals which led to his name being attached to it. Many other hospitals followed the example of Guy's in bringing out annual reports' Its near neighbour St. Thomas's, in fact, seems to have been first in the field by a week or two. But none started quite with the splendour of the three names which have made the Guy's school famous, and the *Reports*, now for 15 years issued by Dr. Arthur Hurst, worthily maintain the tradition.

[12] Palazzo, R., and Tenconi, J.: Semana méd., 1934, i., 766; Rev. sud-amer. de endocrinol., 1935, xviii., 40.

[13] Jeanneney, G., and Viéroz, J.: Bull. et mem. Soc. nat. de chir., 1934, lx., 1305.

ANNOTATIONS

FEVER IN THE TREATMENT OF VENEREAL DISEASE

AMONG the topics discussed at the International Congress of Physical Medicine held in London a fortnight ago was the therapeutic value of artificial fever.[1] Several speakers referred to its beneficial effects in certain forms of syphilis and gonorrhœa, and Dr. W. M. Simpson, who initiated and directs the research in fever therapy at the Miami Valley Hospital, Dayton, Ohio, and is also associated with the United States public health service, made this the subject of his paper. He described the development of the "Kettering hypertherm"—an air-conditioned cabinet of relatively low cost which, in expert hands, combines the merits of safety and efficacy. Since this work began at Dayton 5½ years ago, 431 patients have undergone the treatment, many of them having sustained a temperature of 106°–107° F. for a total of fifty hours or more, and there have been no fatalities. The only complications have been slight burns occurring in a few patients early in the evolution of the method. Dr. Simpson's report deals with 191 sufferers from venereal disease who have received adequate treatment along these lines and have been observed over subsequent periods ranging from 6 months to 5½ years. Excellent and often remarkable results have been obtained in a large proportion of patients with gonorrhœa, of all types and in all stages. The combination of chemotherapy and induced fever in early syphilis has led to rapid clinical and serological improvement, and the available evidence suggests that the two methods combined may bring about cure in a much shorter time than is possible with antisyphilitic drugs alone. Patients with sero-positive primary and secondary syphilis have remained clinically and serologically negative for years, after only thirty weeks' treatment by these means; whereas with chemotherapy alone treatment commonly continues for two years or more. In late syphilis, congenital syphilis, and neurosyphilis the results have been equally encouraging, and the treatment of 27 patients with general paralysis by the combined method resulted in complete clinical remission in 21, while 4 others showed definite improvement. Admittedly the total is small, but within these restricted limits the figures compare favourably with the published results of malarial therapy.

Following the success of early experiments with this method of induced fever, 55 "hypertherms" were supplied to 25 other centres in the United States and at 23 of these the results obtained have been substantially the same. From the quality of the work and the length of time the investigation has been in progress we may say that this form of treatment has now passed beyond the experimental stage. In reviewing some of the results reported from Dr. Simpson's clinic, the Mayo Clinic, and elsewhere—reports strongly suggesting that the method is useful in gonococcal urethritis and in metastatic complications of gonorrhœa—we urged [2] that an investigation of the possibilities of fever therapy as a means of shortening the acute stage of gonorrhœa and preventing complications should now be undertaken by public health authorities in this country, in conjunction with the medical officers of venereal disease treatment centres. The inclusion of all stages of syphilis within the scope of fever therapy opens a yet wider field for the relief of suffering, the reduction of economic loss, and the saving of public money. It seems possible that we are at the beginning of a beneficent revolution in methods of treatment which are wearisome and often unsatisfactory, and it is to be hoped that those with opportunities of testing these methods fully and impartially will show the necessary spirit of active inquiry.

[1] THE LANCET, May 23rd, 1936, p. 1201.
[2] Ibid., March 28th, 1936, p. 726.

HEALTH ORGANISATION ON THE RAND MINES

A CHARACTERISTIC of the native labour force working in the Witwatersrand gold-mines is its instability. The report for the year 1935 of Dr. A. J. Orenstein, chief medical officer of the Central Mining—Rand Mines group, shows that for the mines under his control the average number of natives employed was 99,187; but during the year there were 96,057 recruits, which represents a labour turnover of nearly 97 per cent. Such vast changes complicate the interpretation of the annual death- and sickness-rates, for it has been repeatedly found that new natives are more susceptible to respiratory diseases than the old hands, so that during periods of increased labour supply there is usually observed a rise in these diseases and in meningococcal cerebro-spinal meningitis. Accident-rates appear to be less susceptible to the influx of new labour, a fact which Dr. Orenstein attributes partly to the system of preliminary training in vogue on the mines and to the activities of a Prevention of Accidents committee.

Both the incidence of and the mortality from pneumonia show an increase from 1933 to 1934 and from 1934 to 1935. Towards the end of 1934 an experiment was inaugurated with a mixed anti-pneumonia vaccine at two of the 11 mines on the Rand in the group, every alternate native entering employment at one mine being inoculated and all new recruits at the other being inoculated. At the former the inoculated natives showed a somewhat lower incidence of both lobar and broncho-pneumonia—104 cases amongst 3740 new natives inoculated to 143 cases amongst 3746 uninoculated. At the latter the incidence rose very slightly but the mortality declined. It is clearly too early to draw definite conclusions, but the results are regarded as sufficiently encouraging for the experiment to be continued this year and perhaps extended to further mines. Enteric fever plays an important part in the mortality of natives, constituting 11 per cent. of the total mortality in 1934 and 5 per cent. in 1935. A comparison of the incidence-rate on mines provided with water-borne sewage with that on mines served by night-soil buckets is illuminating. On the former the cases per 1000 employed per annum was 2·65, on the latter 3·99, and it is calculated that if the former rate had prevailed over all the mines there would have been a reduction of 888 cases. In a high proportion of the autopsies performed on natives healed enteric ulcers are found, which suggests a wide prevalence of the disease in the native territories, and probably accounts for its endemicity on the mines. Meningitis occurred on nearly all the mines of the group in 1935, and of the 118 cases nearly 70 per cent. proved fatal. Only 15 cases of hookworm were recorded among the European employees, though it is estimated that at least 10 per cent. of the native labour force are "carriers." Reliance is

placed entirely on latrine control and the use of salt which thus appears effectively to prevent transmission to the European miners.

Dr. Orenstein's staff consists of 13 full-time medical officers, 1 research medical officer, 81 subordinate European personnel, 79 female native nurses, and 262 other native personnel, apart from sanitary supervision and ambulance officers employed by the individual mines who come under the indirect supervision of his department. That no pains are spared in enlisting the intelligent coöperation of compound officials is clear from the Notes on Elementary Hygiene, by Dr. Orenstein in collaboration with Mr. A. Gordon, chief health inspector, issued in book form for their use, of which a second edition has just reached us. Introductory remarks on the human body and its requirements and the theory of health and disease are followed by admirable chapters on housing, the disposal of wastes, disinfection and cleanliness, food, kitchen methods, the rat-proofing of buildings, compound inspection, recreation, and finally an elementary account of the common diseases and injuries which includes notes on pneumonia, tuberculosis, enteric, typhus, plague, chicken-pox, hookworm, injuries, and sepsis. Very clear diagrammatic illustrations of buildings and equipment complete a manual which merits more than a local circulation.

THE DISADVANTAGES OF TANNIC ACID IN MILD BURNS

THE application of tannic acid is rapidly becoming the stereotyped treatment for burns. In severe burns it has given results in the saving of life and in the prevention of pain and disfigurement far superior to those following any other form of treatment. It is sometimes forgotten, however, that the tanning effects of the solution are not confined to the dead tissues. Dr. Frederic Taylor [1] is concerned about the growing tendency to use tannic acid as a universal application for burns of all degrees of severity. In the second degree burn he thinks that the damage to the delicate layer of the epithelium is a serious consideration. Intact skin is protected by the cornified layer of the epithelium, but when that layer is once destroyed the growing cells responsible for the regeneration of the surface epithelium are at the mercy of the tannic acid and may easily be killed by it. The effect of tannic acid on the skin of rabbits illustrates this point. The rabbit's skin contains no protective cornified layer; tanning extends throughout the surface epithelium and even along the epithelium of the hair follicles. Dr. Taylor's advice is to withhold coagulating applications except in burns of such severity that they are needed to save the life of the patient. Of the coagulating solutions he prefers gentian-violet as being least harmful to the generating epithelium. In all milder burns he advises bland applications such as sodium hypochlorite and ointments, as he regards rapidity of epithelial regeneration as of first importance. The stupidity of causing deep injury to tissues, by drastic treatment carried out to promote healing of a comparatively superficial lesion, is self-evident. There may well be many burns in which the old-fashioned methods yield satisfactory results; but in the rather common type of burn of moderate severity it seems to us that the increased incidence of pain and suppuration, which Dr. Taylor admits to be a disadvantage of treatment by ointments and such like, is a big price to pay for rapidity of healing. May it not be that the enthusiasm of some surgeons for the tannic acid treatment has carried them too far, and that they are using the solutions too strong and applying them unnecessarily often? After all, if deep destruction of the epithelium results, scarring will follow, and that is one of the sequelæ the treatment is particularly designed to avoid.

[1] Jour. Amer. Med. Assoc., April 4th, 1936, p. 1144.

EARLY AMPUTATION FOR SEVERE INJURY

A FEW months ago we published a paper from Cairo [1] recommending very early amputation for severe crushing injuries of the limbs. An impressive series of cases led Abdelsamie to conclude that these seriously injured patients stand operation quite well, and that the risk of death increases as amputation is delayed. Benajas,[2] on the other hand, is not convinced of the necessity for speedy operation in every case. Its advantages, he considers, are that it anticipates the development of infection and possibly of septicæmia, and so may save life or the unnecessarily extensive sacrifice of tissue; that it prevents shock by removing the source of toxins; and that in cases where the great vessels are destroyed the patient is spared the sufferings and dangers associated with gangrene. Objections, however, are that it is likely to increase traumatic (as contrasted with toxic) shock, and that it carries a risk of removing either too little or too much tissue, whereas with delayed operation a line of demarcation has had time to form and shock and hæmorrhage have been treated. Benajas believes in immediate amputation (1) where infection has already set in and the patient's general condition is bad, (2) where the great vessels are injured and operation is required to check hæmorrhage, and (3) where the principal nerves (especially in the upper limb) are destroyed. He admits that if a patient is seen within the first three hours, before shock has developed, it is best to operate at once, but he maintains that if shock has already set in the operation should be delayed while anti-shock treatment is carried out. This is in direct opposition to the conclusions of Abdelsamie, who has watched two patients die during the interval and would therefore avoid a minute's unnecessary delay. In practice the decision is often made harder because other injuries are present which make one hesitate to attempt operative treatment of any kind. Surgeons will always be divided into two camps, the bold and the cautious, but it seems highly desirable that both types should have a background of information derived from further observations on the "immediate" method.

[1] Abdelsamie, L.: THE LANCET, Jan. 25th, 1936, p. 187.
[2] Benajas, P. C.: Medicina Latima, 1936, ix., 183.

NITROUS OXIDE AND ASPHYXIA NEONATORUM

CONTINUING his valuable studies on the chemistry of the blood of the new-born baby, N. J. Eastman [1] has tried to ascertain whether anæsthetics play a part in the causation of asphyxia neonatorum. Blood samples were obtained from the umbilical artery and vein in a special segment of cord removed immediately after birth, before the delivery of the placenta, and before the onset of respiration. Maternal blood specimens were also taken from the arm vein and radial artery. The blood of forty babies delivered from mothers under anæsthesia was examined in this way. In four cases the anæsthetic was chloroform, in eight ether, and in twenty-eight

[1] Amer. Jour. Obst. and Gyn., April, 1936, p. 563.

nitrous oxide and oxygen in various proportions; in addition the blood of fifteen infants delivered without anæsthesia was examined as a control. The results show that chloroform anæsthesia has no appreciable effect upon the oxygen saturation of the fœtal blood. In the eight cases of open ether anæsthesia there was a slight depression of the average oxygen saturation in the fœtus, to about 45 per cent. (It must be borne in mind that while the arterial blood of the mother is usually 95 per cent. saturated with oxygen, the arterial blood going to the fœtus at the moment of birth is only about 50 per cent. saturated.) With nitrous oxide greater changes were found; where a gas-oxygen mixture containing 90 per cent. of gas was used for operative interference the oxygen saturation of the fœtal blood was only 25 per cent. Previous observations suggest, however, that saturations as low as this are readily withstood by infants at birth, severe asphyxia being usually associated with figures below 10 per cent. Such a state of affairs was reached only when the percentage of nitrous oxide exceeded 90, when it was given for more than five minutes. The practical lessons of Eastman's study are that while weak gas-oxygen mixtures are perfectly satisfactory for inducing analgesia, the stronger mixtures, administered to produce longer periods of true anæsthesia, carry serious risks for the baby. An adequate saturation of the fœtal blood with oxygen cannot be guaranteed unless the mother receives 15 parts of oxygen in every 100 parts of the gas mixture. Particularly after a long labour, babies withstand anoxæmia poorly, and if operation is necessary in such cases, ether on an open mask is the anæsthetic of choice, as carrying the least possible risk for the mother and child. The forms of apparatus designed to produce analgesia with "gas and air" do not deliver a strong mixture provided their valves are in working order. But clearly the dangers to the infant arising from high percentages of nitrous oxide must be kept in mind by those who advocate the wider use of this gas in midwifery practice.

THE DENTAL TRIBUNAL

THE funds of the General Medical Council have to be carefully husbanded to cover its statutory duties of protecting the public and of ensuring a proper standard of medical education and registration. The Dental Board of the United Kingdom is in a happier position, for after having discharged these obligations the Board has a large surplus available to make dental schools more efficient and to increase the number of their students. This comes about owing to the regulation which requires everyone on the Dentists Register to pay an annual retention fee. At the opening of the thirtieth session of the Board on May 13th Sir Francis Acland expressed his gratification at the prospect that the Board's income would remain for some time on a stable basis. Under a scheme initiated six years ago with the object of attracting young dental practitioners to adopt teaching as a career, nine dental schools have been assisted by contributory grants to establish teaching posts in operative dental surgery, orthodontics, or allied clinical subjects. At the present time the Board is committed to annual grants of £4000 for eight teachers of professorial rank, £2800 for twelve teachers in the demonstrator grade, leaving £8000 a year for bursaries to dental students. During the last two years nearly £7000 has been allotted to four dental schools for new equipment and to one school for new premises. Those who resent the obligation to pay a retaining fee may at least have the satisfaction of feeling that they have contributed to the advance of dentistry as a scientific study. In some respects, Sir Francis points out, the methods of the Dental Board of the United Kingdom are not as drastic as those of some others. In the Irish Free State the dental board has taken action in the matter of signs and announcements. In the opinion of the Irish board the position of a dentist's premises is sufficiently indicated to persons seeking him by the display of a small name-plate, at the entrance to the premises, bearing the dentist's name and qualifications. Anything in excess of this must at the instruction of the board be removed within ten days. Compare with this Sir Francis Acland's ruling on the question whether dental surgeons should carry long rows of capital letters on their professional plates. To separate the R.C.S. or the R.F.P.S. from the preceding L.D.S. may suggest a double qualification, and the solution that appeals to Sir Francis himself is for the qualification to appear in the form L.D.S. (R.C.S. Eng.). But he does not (at present) suggest that the board should make any regulation on the subject; he is content to add, as his mother's Quaker grandmother used to say to her: "Thee may do as thee likes, but thee knows what I wish."

TYPHUS FEVER

To the January–March issue of the *Epidemiological Report* of the Health Section of the League of Nations Dr. Yves Biraud and Dr. S. Deutschman contribute the first part of an elaborate article on the geographical distribution and epidemiology of typhus and typhus-like rickettsia infections. They point out in the first place that after a decade of steady decline the prevalence of typhus has increased in several countries during the last five years. The return of lice-borne typhus, which they attribute partly to disappearance of the population immunised during the war and partly to the prolonged economic depression in rural areas, is not limited to the pandemic focus of eastern Europe, but has also taken place in North and South Africa, South America, and Mexico. The new epidemic wave reached its peak in 1933 in Egypt and China and in 1934 in South Africa and most countries of eastern Europe. In Soviet Russia the number of cases reported rose from 32,035 during the twelve months ending Sept. 30th, 1934, to 66,636 in the following year. The seasonal incidence in Soviet Russia was more irregular than in Poland and Rumania, and reached its maximum earlier than in other countries in eastern Europe. With the exception of Lithuania the Baltic countries were not affected by the disease in 1934 and 1935. In certain districts of Poland there was an increase in typhus in 1935 as compared with the previous years, and a decline or unchanged condition in others. In Czechoslovakia, apart from an isolated case in Slovakia, no case of typhus was reported outside Sub-Carpathian Russia. In the beginning of 1936 there was a substantial increase in the number of cases in Sub-Carpathian Russia, and in March a mild type of disease invaded eastern Slovakia. In Hungary there was a decrease in the sporadic cases reported in 1934–35, whereas in Rumania 1935 was the worst year since 1927. In January, 1936, 572 cases were notified throughout that country, and in February, 1905. The fatality-rate varied between 9·5 and 10·5 per cent. from 1932 to 1935. During 1934 an increase in the number of typhus foci was reported in Bulgaria. Among the other countries in southern Europe Portugal has recently had the greatest number of cases, 104 with

32 deaths having been reported in 1934–35. As regards the countries of North Africa an increase in endemo-sporadicity occurred in 1935 in Algeria, Tunisia, and Morocco, whereas in Egypt the situation was better in 1935 than in the two previous years. The rest of the article will deal with the distribution of the tick-borne diseases variously known as benign summer dermotyphus, exanthematous fever, or boutonneuse fever throughout the Mediterranean basin, and of murine typhus in various European countries.

SIR CHARLES KENDERDINE

THE death on Monday last at Lewes of Sir Charles Halstaff Kenderdine removes one whose services rendered to the victims of the European war were of outstanding value. A well-known land agent, he was at the outbreak of war secretary of the Land Union, but when the disabled soldiers and sailors began to reach home he became the leading spirit in the care and treatment of thousands of badly mutilated men. He was director of the artificial limb supplies and chairman of the advisory council on artificial limbs at the Ministry of Pensions from 1917–20; the light metal limbs which were soon devised were a substantial improvement on anything previously in use, while great attention was paid to standardising the construction of limbs. The restoration to conditions approaching normal life of many who would previously have been doomed to hopeless crippledom was frequent and the good results of the work cannot be exaggerated. When Queen Mary's Hospital at Roehampton was established for the reception of mutilated sailors, soldiers, and airmen, Sir Charles was the main instrument in raising through public subscription sufficient money to buy Roehampton House, where the beneficent work was later extended to the civilian as well as the military disabled. Sir Charles, who was created K.B.E. in 1918, was also one of the founders of the Queen's Hospital at Sidcup where facial injuries received during the war were treated, often with sensational results. The hospital is now a convalescent centre under the dispensation of the London County Council.

SILICOSIS IN SOUTH WALES

THE recent appointment of Prof. T. David Jones, Ph.D., as professor of mining in the University College of South Wales and Monmouthshire, is of interest to many members of the medical profession because of Prof. Jones's long association with the late Dr. J. S. Haldane, F.R.S., in work relating to industrial risks in the various mining industries. Prof. Jones has taken an early opportunity of urging mining engineers throughout the South Wales coalfield to pay more attention to the problem of silicosis—a problem whose final solution necessarily demands coöperation between workers trained in very different fields of science, medical, engineering, chemical, and geological. His lecture on silicosis in the South Wales coalfield, given at the South Wales Institute of Engineers on May 14th, was one of three addresses in which he proposes to cover the different aspects of silicosis and allied dust diseases in this area. While fully admitting the importance of what he called classical silicosis in coal-miners engaged in special work involving exposure to the dust of hard stone, hard heading workings, borers, and sinkers, he suggested that among those accepted for compensation by official bodies there were a proportion that might be described as "official" silicosis, in which the type of disease failed to conform to the classical description, and whose exact nature must be held doubtful. Many of these cases, he thinks, are in reality cases of bronchitis, under which name indeed they are usually diagnosed by the doctors in the mining areas; and he made a strong plea for various improvements in mine hygiene, including the protection of miners from exposure to cold in "spakes" in the anthracite field. He also appealed for treatment facilities for early cases of this condition, and suggested that the Welsh National Memorial Association, already equipped for the treatment of tuberculosis, might be a suitable body for this purpose, if the necessary additional expense could be met. While paying a tribute to the conscientious work of the medical officers of the Silicosis Board, he suggested that they might well be given additional facilities in order to clarify the diagnosis in doubtful cases.

Prof. Jones's lecture was followed by a valuable discussion, in which several medical men as well as mining engineers took part. There was general agreement that the silicosis of the South Wales coalfield is a genuine problem complicated to a very great extent by the fact that there is exposure to a combination of dusts, some chemically active, some relatively inert, so that the clinical picture is far less simple than that, for example, presented in the gold-mining industry on the Rand.

AN AUSTRALASIAN COLLEGE OF PHYSICIANS

AT a meeting held in Melbourne on May 8th and 9th, the Association of Physicians of Australasia agreed to the principle that a College of Physicians should be inaugurated in Australasia. The preliminary steps are now being made to put the resolution into effect. We understand that it is intended to model the new college so far as possible on the pattern of the Royal College of Physicians of London.

THE centenary of the Royal Medical Benevolent Fund is to be celebrated by the Royal Society of Medicine on Wednesday, June 10th, when Dr. Robert Hutchison and Sir Thomas Barlow, the two presidents, will receive guests at an evening reception at the Society's house in Wimpole-street, W.

Sir Thomas Lewis, F.R.S., will deliver the George Alexander Gibson lecture of the Royal College of Physicians of Edinburgh on Monday and Tuesday, June 8th and 9th, at 5 P.M. His subject is Symptoms and Signs of Embolism in the Limbs, with special reference to pain.

OUR last issue contained an announcement that Sir Robert Rait, principal and vice-chancellor of Glasgow University, was retiring on Sept. 30th and would be succeeded by Sir Hector Hetherington. Sir Robert's retirement was due to ill-health, and we regret to record that he died on Monday last in his 63rd year.

THE board of governors of Westminster Hospital have accepted the offer of about £350,000 for the site of the hospital made by the firm of John Laing and Son of Carlisle. A further sum of £250,000 will however be required to complete the rebuilding of the hospital on its new site in Horseferry-road. Messrs. Laing intend to build a block of offices on the old site.

PROGNOSIS

A Series of Signed Articles contributed by invitation

CII.—PROGNOSIS OF "ENLARGED" TONSILS

TONSILS used to get so big that they obstructed the fauces, leading to defective respiration and to deformity of the chest. They were accompanied by a similar hypertrophy of the other masses of lymphoid tissue of the upper respiratory tract and were associated with the symptoms described as "mucous disease" by Dr. Eustace Smith. In the words of Morell Mackenzie they were the size of walnuts, often of bantam's eggs and sometimes of hen's eggs. If one saw such to-day it is probable that the right treatment would be to cut off the redundant tissue by the old operation of tonsillotomy; but it is doubtful whether anyone would have the courage to do it. Actually we do not see them; the whole syndrome has practically disappeared. It is reasonable to argue that all these tonsils were "septic" and that to-day they would have been enucleated before they had become "enlarged." I do not myself believe that that is so, but that it was a form of reaction of the body to some state of hygiene that no longer exists, just as we no longer see the cases of hypertrophic rhinitis nor advanced cases of atrophic rhinitis, although the big air-way which underlies the last is commoner than it was.

A pertinent question then arises. If the condition for which our laryngological grandparents devised a small operation has disappeared, why do we not only continue to operate upon tonsils, but to perform an operation which is a much greater one than the old? The answer is that we enucleate tonsils because they are "septic," and by their being septic we mean that there are living in the crypts organisms which are doing harm locally or to the body generally by absorption into the blood stream. Our problem of the prognosis of "enlarged" tonsils becomes then changed to the problem of the prognosis of "septic" tonsils. There is no certain relationship between the two; either a tonsil of moderate size—which would be called "enlarged" to-day by those who do not remember the really big ones—or a small tonsil may be a "septic" one. This altered problem may be approached by considering what would happen if no tonsils were removed. The local harm shows itself by a series of illnesses known as "acute follicular tonsillitis" or as "sore-throats" when described by the patient. When three of these occur in a twelvemonth the removal of tonsils is followed by their cessation. We can therefore say that in such cases tonsillectomy saves the patient further pain and distress, avoids his taking time off duty with the consequent loss of work or of schooling, and perhaps results in some improvement of general health. It is doubtful whether lives are saved thereby; our grandparents did not die from acute follicular tonsillitis nor from the associated quinsies and there is a definite tendency for one to grow out of the former if the tonsils are left alone. It is true that it is only rarely that we see the acute non-suppurative phlegmons that are described in the old books; but it is by no means certain that these and allied conditions such as erysipelas of the throat have anything to do with the tonsils. The last time any quantity of cases was reported was before 1913 when the subject was discussed at the International Congress of Medicine held in London in that year.

SEPTIC TONSILS

So far as the tonsils which show local evidence of sepsis are concerned therefore the problem is a fairly easy one. We have however often to decide on "sepsis" in tonsils without any evidence of follicular tonsillitis objective or subjective being obtained. This brings up the thorny problem of so-called "focal sepsis." We can ask the question in one of two ways. How much good do we do by removing tonsils for focal sepsis? or How much harm would come if we left them all? With regard to the first, we can say at once: Undoubtedly one works miracles thereby on occasion.

I can remember three such cases in 17 years:—

The first was a young doctor who for weeks could not rise from his bed for sciatica. There was no evidence that the tonsils were a source of sepsis, but other methods of treatment having failed, Dr. J. A. Ryle said that he thought the tonsils must be removed. This was done under local anæsthesia. Within 48 hours the pain of the sciatica was gone and it never returned. The second was an income-tax inspector with pain in the back which did not keep him from work, but which for years had impaired his efficiency and damaged his temper. Tonsillectomy made a different man of him. The third was a married woman approaching middle age who was crippled with aches and pains without objective signs. Almost as soon as her throat was healed she was able to return to her golf.

In none of these three cases was there any history of tonsillitis or sore-throat; in all of them the tonsils were small and gave no physical signs that would distinguish them from the numerous tonsils removed without any improvement, or from the tonsils seen in persons of the same ages who have no lesions that can be attributed to focal sepsis.

Three such cases in 17 years is a poor return; but it must be remembered that in each case the result changed the meaning of life to the patient. It is this which compels us to go on and to try to find some further guidance in the selection of cases. Where there are tonsils that should come out on pharyngological grounds we are on firm ground. I can add a fourth case from this category.

A young nurse was in danger of having to give up owing to flat-footedness. Profoundly sceptical as to any relation between this and her tonsils, I agreed to remove these owing to the recurring tonsillitis. The flat-footedness at once disappeared, she was able to finish her training and to follow her profession as a nurse.

In the rheumatoid arthritis of the middle-aged woman I believe that the cases in which improvement may result are those in which there is a history of recurring tonsillitis in adolescence or young womanhood; but I must confess to bitter disappointment in the results, hoping at the most that I may have stayed the progress of this cruel disease from time to time. Further improvement in selection must come from the physicians. It is impossible to get from these what organism they suspect. They ask for a report on "focal sepsis," and when pressed with the question "In relation to what organism?" they fail to reply. When general medicine has advanced to the stage of knowing what type of organism may be causing any given lesion cultivation of the tonsil before and after removal may give some guidance for the future in the decision to operate.

Would harm come if we left all the tonsils other than those that give a clear indication for removal on

pharyngological grounds? So far as the two lethal diseases of childhood—acute rheumatism and nephritis—are concerned, the answer is in the negative. There are still some physicians who demand the removal of tonsils as a routine in these diseases, but as with all rules-of-thumb in clinical medicine this routine is almost certainly a failure.

We may approach our problem once again by asking why there are so many tonsil operations performed? Although the number is now on the down grade they are still too many; and the reason is that this idea of "sepsis" is neither an anatomical nor a pathological entity. There must therefore be a wide divergence of opinion on the value to be laid on different pieces of evidence, general and local, objective and subjective, upon which the decision is made.

Finally, with Hippocrates, we must ask not only what good can be done by removing "septic" tonsils, but what harm can ensue from the removal of tonsils which are not septic? This is an important question in prognosis and, in my opinion, the harm may be of wide range and of varying intensity.

ILL-EFFECTS OF DRASTIC REMOVAL

In children.—In all children under 5 and perhaps under 8 the removal of tonsils seriously impairs resistance to infection, not of the specific diseases such as diphtheria or measles, but to that general infection which leads to severe sore-throats, colds, being generally "off-colour," and the appearance of diffuse shotty glands in the neck. This particularly results from the type of operation in which the pharynx is practically flayed of lymphoid tissue. The so-called lingual prolongations of the tonsils are removed almost to the midline of the tongue, and in addition a thorough adenoid operation results in all the lymph tissue being removed from the nasopharynx. In the children of the well-to-do not much harm results, nature has provided so many resistances that those remaining are enough to combat such organisms as are met under good conditions of hygiene. Even in these however a deafness of a catarrhal type may occur between the ages of 14 and 16 causing much anxiety to the parent.

In the children of the poor, however, who have to combat a greater degree of sepsis in the Listerian sense varying with the conditions of hygiene under which they live, the results may be very serious and vary from a fading away of the child for no apparent reason to a chronic nasal catarrh which makes it seem that the child is never free from a cold. Removal of tonsils seldom cures recurring colds; it may make them worse. Nor does it cure otitis media, except in rare cases, but what is not generally known is that it is extremely difficult to get well an otitis media that occurs in a tonsillectomised child, especially if the operation has been that which I have called the flaying of the pharynx.

In the adult retention of lymph tissue is not so important. There is, however, one condition in which conservation is necessary. It is the person with the large nasal air-way, a large nasopharynx, and an oro-pharynx in which the soft palate, usually a small one, hangs down at an undue distance from the posterior pharyngeal wall. These people complain of "sore-throat" which on inquiry proves to be daily or constantly present. They have large red tonsils as though nature had tried to limit the cross-section of the air-way by their hypertrophy. The removal of these makes the symptoms much worse.

SUMMARY

We may sum up by saying that the "enlarged" tonsil no longer exists. It is doubtful whether inflammations of the tonsil ever kill, but the condition of "septic tonsils" causes much ill-health. When this takes the form of recurring tonsillitis the removal of the tonsils will almost certainly cure, but when this indication is not present the results are disappointing, though occasionally miraculous. In the adult not much harm is done by removing unaffected tonsils, but in children—especially among the poor—the damage may be serious and far-reaching, though difficult to assess. The mistake most often made is that of confusing the reaction of the tonsils to a droplet infection with an inflammation arising from organisms residing in the tonsil.

T. B. LAYTON, M.S., F.R.C.S.,
Surgeon in Charge of the Throat and Ear Department at Guy's Hospital.

THE SERVICES

ROYAL NAVAL MEDICAL SERVICE

Surg. Capt. J. G. Boal to *President* for course.

Surg. Comdrs. W. A. Hopkins to *Galatea*, and F. B. Quinn to *Victory* for R.N.B.

Surg. Comdr. (D) A. D. McHaffie to *Barham*.

Surg. Lt.-Comdrs. T. L. Cleave to *Iron Duke*, and S. Jenkinson to *Excellent*.

Surg. Lts. F. W. Gayford to *Excellent* and to *Victory* for R.N.B.; D. M. Beaton to *Lucia*; W. J. F. Guild to *Boscawen* for R.N. Hosp., Portland, and for dockyard; S. J. Van Pelt to *President* for three weeks' course and to *Courageous*; and T. J. Harkin, M. G. H. Heugh, L. Merill, E. H. Murchison, and G. A. Maxwell Smith to *Victory* for R.N.B.

ROYAL NAVAL VOLUNTEER RESERVE

Surg. Lt.-Comdr. A. S. Pearson to *Curacoa*.

REGULAR ARMY RESERVE OF OFFICERS

Col. J. W. Langstaff, D.S.O. (late R.A.M.C.), having attained the age limit of liability to recall, ceases to belong to the Res. of Off.

MILITIA

Lt.-Col. (local Lt.-Col.) R. M. Gorssline, D.S.O., M.B., and Maj. (local Maj.) J. E. Hunter, M.D., of Permt. Active Mila. of Canada, relinquish local rank on ceasing to be empld. on Mil. duty in the United Kingdom.

ROYAL ARMY MEDICAL CORPS

ARMY DENTAL CORPS

Short Service Commissions: J. A. O'Gorman to be Lt. (on prob.).

TERRITORIAL ARMY

Majs. W. W. Hallchurch and R. J. W. A. Cushing, T.D., to be Lt.-Cols.

Capts. J. Cook and R. W. Power to be Majs.

Lts. B. L. McQuillan and W. N. S. Donaldson to be Capts.

W. A. Bellamy to be Lt.

J. R. Hamerton (late Cadet Dulwich Coll. Contgt., Jun. Div., O.T.C.) to be Lt.

ROYAL AIR FORCE

Flying Offrs. promoted to the rank of Flight Lt.: L. E. A. Dearberg, H. L. Willcox, P. A. Cooper, A. R. C. Young, and R. C. H. Tripp.

Flight Lts. T. D. L. Bolan to Medical Training Depôt, Halton, and V. D. A. Blackburn to No. 1 School of Technical Training (Apprentices), Halton.

Flying Offr. R. F. Courtin to Medical Training Depôt, Halton.

Dental Branch.—A. P. Britton and A. J. S. Wilson are granted non-permanent commissions as Flying Offrs. and to Medical Training Depôt, Halton.

RESERVE OF AIR FORCE OFFICERS

Flight Lt. N. P. Henderson resigns his commission.

SPECIAL ARTICLES

MEDICAL TRUANTS[1]

By Lord MOYNIHAN OF LEEDS, M.S. Lond., F.R.C.S. Eng.
CONSULTING SURGEON, LEEDS GENERAL INFIRMARY

[Lord Moynihan reviewed, in an eloquent dissertation, the careers of a number of men who, while medical by profession and occasionally by practice, became more famous for other than medical reasons. Thomas Linacre, in whose honour the lecture is founded, formed a good example, for he was known in his day as classical scholar rather than as physician, in spite of his early connexion with the Royal College of Physicians of London.

The lecturer first reviewed the association in Greece at the dawn of scientific medicine with philosophy and pointed out the additions in anatomy and physiology made by Alexandrian, Roman, and Arabian leaders. The debt to Hippocrates, Galen, and Avicenna being acknowledged, their followers were criticised mainly as recorders; though encyclopædic in their generalisations they preserved the old traditions and discussed every old device and tortured new meanings out of old phrases. "Tyrannous indeed," said the lecturer, "was the control which Hippocrates and Galen exercised for so many centuries; in all that sterile period no new thought is found, no new method, no new experiment, and to deny the authority of Hippocrates and Galen or to dissent from their teaching was not merely heterodox, it was heresy punishable by death itself."

The awakening of learning and with it the growth of medicine came from the great schools of Italy and the leaders of mediæval medicine were subjected to scrutiny in a similarly apt manner, particular attention being drawn to William Gilbert, doctor of medicine of Cambridge University in 1569 and a graduate of Linacre's college. For it was Gilbert who asked, speaking of magnetism, "why should I submit this noble science and this new philosophy to the judgment of men who have taken oath to follow the opinion of others, to the most senseless corruption of the arts, to lettered clowns, grammatists, sophists, spouters, and the wrong-headed rabble, to be denounced, torn to tatters and heaped with contumely?" Other great medical truants enumerated were Galileo, once a medical student; Galvani, physician and physicist; Robert Boyle, the possessor of an honorary medical degree and the formulator of Boyle's Law; John Locke, physician, philosopher, and theologian; Lower and Mayow, known as experimenters, W. H. Wollaston, a country practitioner whom the lecturer found the most expert chemist and mineralogist of his age; Prout, physician and deliverer of the Goulstonian lectures on the application of chemistry to physiology and the originator of Prout's hypothesis; and the great Thomas Young, a physician to St. George's Hospital, famous for his work in physicial optics and as the interpreter of the Rosetta Stone. Woodward, again, the geologist, was a doctor earning a right to practise through a medical degree conferred by the Archbishop of Canterbury which was later confirmed at Cambridge, while another doctor known for his geological learning was James Hutton, who made the first geological maps. Famous scientific truants also enumerated were Linnaeus, Joseph Hooker, for 20 years director of Kew Gardens, and Thomas Huxley, champion of evolution. He continued:—]

Truants to Politics

Sir STARR JAMESON (1852–1917), whose name will be forever associated with the Transvaal "raid" in 1895, took the degree of M.D. London in 1877, practised in Kimberley, but entering political life became Member of Parliament for Kimberley in the Cape Legislative Assembly and in 1904 Prime Minister.

One of the greatest truants who ever strayed from medicine to become our only Lord Chancellor was ROBERT BANNATYRE FINLAY, Viscount Finlay (1842–1929). Born at Trinity, near Edinburgh, the eldest of a family of eleven children, he was the son of a medical man, and was destined at once for the profession of his father. He was educated at Edinburgh Academy, where he won almost every prize and where he gained the deserved reputation of an exact and critical classical scholar. His scholarly instinct and the severe mental discipline of his youth served him well at the Bar. His faith in a classical education found expression when as President of the Classical Association he advocated the teaching of Latin conversationally as a living language. He qualified as M.B. at the Edinburgh University. He was active as speaker at the University Debating Society. After qualification he visited Europe and became an accomplished linguist, speaking German, French, Spanish, Italian, and modern Greek. He never practised medicine or his favourite branch surgery, for the reason, I an told, that his hands did not obey the commands of his brain to a degree that gave him satisfaction. He turned to the Bar, and was called to the Middle Temple at the age of 25. He took silk in 1882. His success was immediate and considerable; he owed it to his clearness, good sense and directness of argument. Moreover he looked the part. . . . In December, 1916, on the formation of Mr. Lloyd George's first Government, he became Lord Chancellor, an appointment enthusiastically welcomed by the whole legal profession among whom he had worked for 50 years. Later he became a judge of The Hague Court, and finally, when almost 80 years of age, he was appointed the British Member of the Permanent Court of Arbitration at The Hague, a post for which he possessed every qualification but youth.

WALTER BALTHASAR FOSTER, first Lord Ilkeston (1840–1913), who was the second medical man to be raised to the House of Lords—Lister having been the first—came from the north of Ireland, and attended the same Grammar School in Drogheda which long before had first guided the mind of the Duke of Wellington. Trinity College, Dublin, gave him his degree. He went to Birmingham as Medical Tutor to Queen's College; he was then made Professor of Anatomy and finally was appointed to the medical staff of the Birmingham General Hospital. He quickly distinguished himself in professional circles, acquired a wide practice, and contributed much to the medical and political literature of the day in THE LANCET, upon whose staff he served, and elsewhere. Inspired by Mr. Joseph Chamberlain, the maker of Birmingham's political life, he took active part in civic duties and in 1883 was elected a member of the City Council, where his work for the public health was of great value. He was accomplished as a man of affairs and an excellent speaker. In 1885 he entered Parliament as member for Chester, and at the next election he stood for the Ilkeston division of Derbyshire. He was gradually recognised as a remarkable personality, quick in recognition of faces and in memory of names, and at once on friendly

[1] Excerpt from the Linacre lecture delivered at St. John's College, Cambridge, on May 6th, 1936.

GUILLOTINE

CLEMENCEAU

SUN-YAT-SEN

terms with his constituents. He became Parliamentary Secretary to the Local Government Board, where his energy and his tireless capacity found full scope when an outbreak of cholera was threatened. In 1910 he was raised to the peerage, took the title Ilkeston, and was made an honorary freeman of that town.

A medical truant to politics who considerably enlivened procedure in the House of Commons was CHARLES K. D. TANNER (1850–1901). Son of a physician in Cork, he was educated at Winchester and Queen's College, Cork, whence he graduated in 1872, taking his diplomas in medicine in 1875 and the M.D. of the Royal University of Ireland in 1876. He visited the Schools of Medicine in Paris, Vienna, Berlin, and Leipzig, and on his return home quickly gained hospital and teaching appointments, the due rewards of brilliancy. But politics claimed him for its own. In 1885 he was returned for Mid Cork, and threw himself with amazing fervour into the Nationalist movement. In the House of Commons his combative instincts were rarely allowed to rest. Brilliant, witty, and sometimes unanswerable assaults on the Government greatly amused the House; these, combined with his joy in practical joking at the expense of his opponents, prevented him from receiving the serious attention, his merits fully deserved. In private greatly loved, in political strife both feared and enjoyed for his audacity, truculence, and bitter but witty irony, his death was mourned alike by friend and foe.

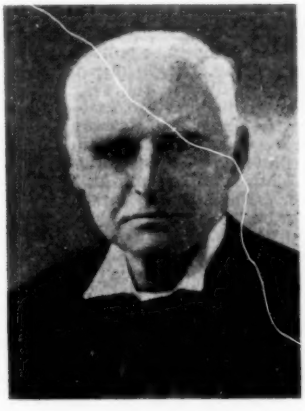
[Lord Moynihan then alluded to the facts that the present Prime Minister of Northern Rhodesia, Mr. Martin Huggins, is F.R.C.S. Eng., and that two of his own contemporaries in medicine in this country, Dr. Christopher Addison and Mr. Walter Elliott, reached cabinet rank. He resumed:—]

In France, medicine has rendered great service to the State. J. P. MARAT (1742–1793) lived for a time in Soho (1766–1777), returning to his native country as Physician to the Guard, thereto appointed by Comte D'Artois, afterwards Charles X. While in England he published two pamphlets—"A Singular Disease of the Eye," and "On the Gleet." Both in England and in France he achieved some fame as practitioner. In 1788 his medical life was over, and his active political life began. In the notoriety of that life his scientific and philosophical knowledge were to be forgotten, the high position his merits had gained to be denied him, and himself to be scoffed at and derided as an ignorant charlatan who had acquired wealth by selling quack remedies. In his later years persecution, misery, and poverty were his lot; he hid in sewers for his safety, and there, it was said, contracted a terrible form of skin disease. Politically he was always in opposition, "der Geist der stets verneint," and was merciless in his bitter condemnation of all who held power. On July 13th, 1793, he was stabbed in his bath by Charlotte Corday.

In medicine we are not unfamiliar with the improper attachment of names to methods or inventions. "Lister's sounds" are not sounds, but metal bougies; they were not invented by Lister but by Syme. Foreign annexations are not unknown; "Basedow's disease" was first described by Graves; and "Mikulicz's operation" first performed by Paul.

STARR JAMESON

LEONARD WOOD



FINLAY

Not the least of these oddities in eponymous nomenclature is concerned with that instrument for decapitation known as the guillotine. JOSEPH IGNACE GUILLOTINE (1738–1814) was a French physician and an ardent humanitarian. He was a very distinguished student, and settled in practice in Paris. To him the Revolution came as the revelation of a new heaven, and it gained his unflagging support. With Chemier and Lavoisier he joined the "Society of 1789," which later affiliated itself to the Jacobins. At the constitutional assembly of which he became a member he proposed that "for all classes capital punishment should be by decapitation." This was unanimously accepted. Venal judges ceased to have power to torture prisoners, for Guillotine had also secured the absolute equality of criminals, irrespective of rank, position, or the nature of their crime; and he had secured also the least painful execution for all condemned to death. Decapitation, hitherto the hereditary privilege of the few, became the right of all condemned to die. He abhorred the association of his name with the instrument of death, devised by an army surgeon, Antoine Louis, and at first known as "la Louisette."

The most romantic life among modern truants from Medicine to Statecraft has perhaps been that of CLEMENCEAU, who was born in Vendée in 1841 and died in 1929. He qualified in 1865. He visited London and the United States, returned to Paris, and shortly after the outbreak of the Franco-Prussian war of 1870, was elected Mayor of Montmartre. His political career had, however, begun many years before, and so long ago as 1862 he was imprisoned for two months for his share in a Republican demonstration. From 1871 to 1893 he sat in the Chamber of Deputies, playing the part of ardent radical, in manner not unlike Joseph Chamberlain and Sir Charles Dilke at the same time in England. They, however, became gradually sobered by age and experience, but Clemenceau suffered no abatement of those wild and virulent methods of opposition which made him so dangerous an antagonist of Gambetta and Ferry, which gave him the nickname of "The Tiger," but which left on the public mind in his earlier years a conviction that so ruthless a destroyer could have no constructive power. In 1893 he lost his seat and for nine years devoted his time to literature, was a protagonist with Zola in the Dreyfus campaign, and his power as journalist was unexcelled. In 1902 he became Senator for the Var and Minister of the Interior, and from 1907 to 1909 was Prime Minister of France. It was felt then that his political career was at an end, but the war came, and on July 22nd, 1917, the French senate heard from his lips a speech which convinced them that the only man capable and energetic enough to lift France from the moral crisis of a dark year was Clemenceau. He proved the Saviour of France and "deserved well of his country."

The first President of the Chinese Republic, SUN-YAT-SEN (1866–1925), was a doctor. He early devoted himself to politics, especially while living in Hong-Kong. He entered the College of Medicine in Hong-Kong in the year of its inauguration, 1887, and in 1892 was its first graduate. For a time he practised in the Portuguese Colony, Macao. He lived however, much abroad, and spent his days in stirring up plots against the Manchu dynasty. A revolution in China broke out on Oct. 10th, 1911, and on Dec. 25th he was elected President of the Chinese Republic, resigning in March, 1912, to Yuan-Shih-Kai, who in 1915 proclaimed himself Emperor. Sun-Yat-Sen returned to China, organised a new rebellion, and led South China against Yuan-Shih-Kai. In 1917 he was appointed Generalissimo of the Canton Government. His efforts to come to friendly understanding with Russia were not without result; and he introduced Russian ideas, military and civil, into China. He died of cancer in 1925.

The greatest colonial administrator America has yet produced, General LEONARD WOOD (1860–1927), was a medical truant. Son of a medical man, he took to the same profession and qualified at Harvard in 1884. He entered the army as an assistant surgeon and soon saw service in Arizona against Apache bands. He took his share in fighting and gained the rare and coveted "Congressional Medal for Valour." After service under three presidents in Washington, he and Theodore Roosevelt were jointly authorised, when the war with Spain broke out in 1898, to raise and equip a regiment of rough-riders. After the action of Las Guasimas he was promoted Brigadier-General and became Governor of Santiago after its capture. With enormous energy and with a passion for patriotic service, he civilised the whole province. He then became Governor-General of Cuba. Administratively, and especially in connexion with medical problems, his success was immense. He brought order out of chaos, and his elimination of yellow fever from the island was the model for the later stupendous work of Gorgas at the Panama Canal. His work made possible the creation of the Republic of Cuba in 1912. He owed his success to unbounded energy, determination, common sense, and a high personal character; he had studied not without profit much of the history of recent British colonial administration. When his old colleague Theodore Roosevelt became President of the United States, he conferred upon Leonard Wood the most difficult post he had to bestow. This was the military governorship of the Moro province of the Philippines. Before taking this post he had visited Germany, and had made friendship with Lord Roberts. These two were convinced of the threat of Germany to the world, and they agreed that "Peace could be preserved only by the power to preserve it." Until 1905 he remained Governor of Moro, and by his labours there he turned over the government of the province to his successor when "law and order, and a strong and stable government" had been established. He became chief of the General Staff in 1910. In the States he played the same part as Lord Roberts did in England. He sought to raise enthusiasm for military preparation against the world crisis he felt to be impending. But, like Roberts, his preaching raised little response. After the outbreak of war in August, 1914, he strove with endless vigour and enthusiasm to equip America for the share that he realised she must take. But in search of active participation he was elbowed into the background and only towards the end of 1917 was he allowed to visit France. He was wounded in 1918, and returned to Washington. Democrats in power did little to help this great Republican. After the war he became Governor-General of the Philippines in 1921. Though he sought to educate the people in the principles of popular democratic government and to bring them more and more into a share of the administration, he was tenacious in his belief of the necessity of American sovereignty. He died with his work unfinished in 1927; and since his death his reputation as the greatest of American colonial administrators has become unassailable.

A distinguished truant from medicine to politics was Sir HILARION MARCUS FERNANDO of Ceylon. After a most successful career at the Royal College, Colombo, he came to England to study medicine. At University College Hospital his career was one of uninterrupted success which culminated in his winning the scholarship and gold medal at his M.B. Lond. examination. On returning to Ceylon his brilliant academic success was recognised by his appointment to the staff of the General Hospital, Colombo, but at the height of medical success he suddenly played truant to medicine, took to a political life, and greatly distinguished himself in works connected with agriculture in the island and with economics. He died early in the year 1936.

Truants to Literature

Many truants from medicine have escaped to literature; but not a few of those who remained

faithful have adorned the pages of English letters with prose hardly excelled in beauty or pregnancy of meaning by other writers. Among such men my old teacher, Clifford Allbutt, was perhaps supreme among physicians, as was Sir James Paget, greatest of our orators, among surgeons. But they were by no means the first.

Though I may be omitting poets worthy of mention, first of whom was Empedocles (500 B.C.), let me begin the story of authors who were truant with FRANCOIS RABELAIS (1483?–1553), born in Touraine. He became a monk to please his father, and joined the Benedictine Order from which, however, he resigned after punishment for indecorous behaviour. When 47 years of age he studied medicine at Montpellier and later practised at Lyons, taking a doctor's degree in 1537. In later life he returned to the Church and became Rector of Meudon. His most famous work, still widely and appreciatively read, was "The Lives, Heroic Deeds and Sayings of Gargantua and Pantagruel," an extravagant, but despite its grave blemishes and coarseness, a delightful satire on monks, priests, popes, and pedants. The obscenity and absurdity are blended with learning, wit, and humour. As priest he was exemplary in many respects, devoted to the welfare of his flock, beloved by children and generous to all, especially to those in need. His house was the resort of the learned.

JULIUS CÆSAR SCALIGER (1484–1558), the distinguished classical scholar, was also in the ranks of medicine. Born on Lake Garda, he became page to the Emperor Maximilian whom he served in war and peace for 17 years. It was only on leaving the army at the age of 40 that he applied himself to the study of medicine, and not less to the acquisition of languages. His first work "A Defence of Cicero," was prompted by the "Ciceronianmus" of Erasmus, wherein the Latin author was harshly ridiculed. His invective against Erasmus stirred the whole world of learning. His erudition was considerable, but his vanity and insolence greatly lessened the high esteem in which otherwise he would have been held by all contemporary scholars.

THOMAS LODGE (1558–1625) had one of the most interesting and varied careers of mediæval times, and may be regarded as a truant in the opposite direction—from a life of endless variety and thrilling incident to medicine. Second son of Sir Thomas Lodge, Lord Mayor of London in 1562, member of a family dating from the reign of Henry I., he graduated at Oxford in 1577, having already written verses. He early abandoned law for literature, and was soon welcomed as companion by Drayton, Lyly, and Watson. His vagaries seem to have alienated the affections of his family and his name was omitted from his father's will. He has been described as one who was "hunted by the heavy hand of God and became little better than a vagrant, looser than liberty, lighter than vanity itself." His early life indeed was marked by continuous unrest and perpetual unhappiness, though he was prodigal with his pen, which was often rancorous. In 1588 and again in 1591 he went to sea, travelling to South America and visiting among other places, Santos and its then famous library. On his return he published more verse referring to the sea. In later years he earned a measure of public approval and support, and is said to have won the commendation of Spenser. After 1595 he wrote only a few volumes of prose. He began the study of medicine in 1596 and took a degree at Avignon in 1600 and at Oxford two years later. In 1599, when the plague raged in London, he wrote "A Treatise on the Plague." In 1609 he is mentioned in a list of the chief physicians of the day. It is, however, as lyric poet that Lodge is most worthy of remembrance, and he is described by a contemporary as a writer of "those pretty old songs and madrigals which are very much the strain of these times"; his lyrics, indeed, are still regarded as among the finest in our language, though it is admitted that he owes much to the French author, Desportes, and something to Ronsard. Sir Humphry Rolleston says that the most interesting of his plays is "Rosalynde: Euphues Golden Legacy," 1590, which provided young Shakespeare, who was then but 26, with the plot of "As You Like It."

Supreme among all truants must surely be Sir THOMAS BROWNE, of Halifax and Norwich, whose "Religio Medici" continues to be the delight and inspiration to an endless host of his successors. Sir Thomas Browne (1605–1682) was educated at Winchester and Oxford. He practised for a time in Oxford but soon left for the Continent, visiting Montpellier and Padua, and at the age of 28 was given the degree of M.D. at Leyden. On his return he began practice at Shibden Hall, near Halifax, which still stands. After a few years he left Yorkshire for Norwich, and then took his degree of M.D. at Oxford in 1637. He quickly gained high repute as a physician. In 1641 he married and despite his opinion that the act of coition was "the foolishest act a wise man commits in all his life, nor is there anything that will more deject his cooled imagination than to reflect upon the folly he hath committed," he became the father of ten children. The most famous of all his books "Religio Medici" was published surreptitiously in 1635. It was written while he was in Yorkshire, for the occupation of his leisurable hours and for his private exercise and satisfaction, at the age of 30. It suffered from the premature publication of unauthorised versions of which there is nevertheless evidence that the author was not unaware. Sir Thomas, like other great men, believed in the influence of the stars upon the affairs of men, and he held this as explaining the fact that "he was not disposed for the mirth and galliardise of company." Perhaps the most learned of Sir Thomas's work was "Pseudodoxia Epidemica." Its compilation was the work of many years, and the scholarship and research therein contained are remarkable. The reader of to-day will smile as he realises the extent to which Satan is here reproving sin, for credulity was the inherent weakness of a great mind. He believed in astrology, alchemy, witchcraft, and magic, and his faith in the Ptolemaic system of astronomy was unshakable. He showed his credulity when in a trial for witchcraft he was asked by the presiding judge to give his opinion of the case, he said: "That the fits were natural, heightened by the devil's coöperating with the malice of the witches at whose instances he did the villanies"; an opinion which did much to secure conviction. He regretted that in his professional works he had no time to make "those infalliable experiments and those assured determinations which the subject sometimes requireth." His reputation for wide and remote knowledge spread throughout the land, and his opinion and guidance were sought by men themselves learned in philosophy, in natural history, and in medicine. He wrote upon "Urn burial," and made it an occasion for quoting Dante. Sir Thomas Browne received a knighthood when Charles II. visited Norwich, after the refusal of the Mayor for whom the honour was first considered.

Sir RICHARD BLACKMORE (1650–1729) took a degree in Arts at Oxford and in Medicine at Padua. His philosophical poem "The Creation" was praised by Addison. His poems were written as he travelled on his rounds. He said:—

> "In leisure hours in epic song he deals,
> Writes to the rumbling of his coach's wheels."

Physician to William III. and afterwards to Queen Anne, he is chiefly remembered for the distinction of those who attacked him, among them being Dryden and Sir S. Garth. Colonel Coddrington wrote:—

> "By nature formed, by want a pedant made,
> Blackmore at first set up the Whipping trade.
> Next quack commenced: then fierce with pride he swore
> That toothache, gripes, corns should be no more.
> In vain his drugs as well as birch he tried
> His boys grew blockheads, and his patients died."

Of medical men who for a time strayed into other paths, we may recall THOMAS DOVER (1660–1742),

inventor of the eponymous powder. In younger days he sailed from Bristol in a privateer commanded by a man of parts, William Dampier, captain in the Navy, hydrographer, buccaneer, to whom he was second in command. We owe to him the discovery of the original castaway, Defoe's model for Robinson Crusoe. The powder which bears his name is in high repute even to this day. He was known colloquially as the "quicksilver doctor," because of his faith in the use of mercury.

Sir SAMUEL GARTH, a Yorkshireman, though never wholly truant (1661–1719), was of high repute in his day, both as physician and as poet. "Dispensary, a Poem," published in 1699, certainly led to the creation of these invaluable institutions for the poor. He delivered the Goulstonian lectures in 1694 and in 1697 the Harveian oration at the Royal College of Physicians. He obtained permission from the College for the body of Dryden to lie there before burial and he delivered a Latin oration over it. He enjoyed a large practice, held office at the Court, and was, Pope said, the "best natured of men." His couplet in the "Dispensary" is of all his work the best worth remembering:

> "To die is landing on some distant shore
> Where tempests never beat nor billows roar."

Later, we claim JOHN ARBUTHNOT, F.R.S. (1667–1735), an Aberdonian, a graduate of St. Andrew's physician and wit, a man whose extraordinary ability was hailed by Pope. By good fortune he was present at Epsom when Prince George of Denmark was taken suddenly ill. He became physician to Queen Anne, and, Swift says, was her "favourite physician." He attended her on her death bed. He gave the Harveian oration in 1727. Fifteen years earlier he published "Law in a Bottomless Pit, or the History of John Bull"; and it is probable that therein he created our national character and name. He contributed to the "Memoirs of Martinus Scriblerus" of which Pope was editor.

MARK AKENSIDE (1721–1770), poet and physician, after little success as practitioner in the provinces, went to Hampshire, and then to Bloomsbury-square, financed by an old friend, Jeremiah Dyson, until prosperity came to him. While still in Newcastle he wrote "The Pleasures of the Imagination," a poem that did not lack success; and was, indeed, claimed as his own by a charlatan, Rolt. It bears Akenside's name only on the second edition. His most famous poem, however, is "Hymn to the Naiads." He became F.R.S. and M.D. Camb. in 1735, and in 1755 delivered the Goulstonian lectures at the Royal College of Physicians, and in 1756 the Croonian lectures. He died on the bed on which Milton had died, having kept silence as poet during the days of his large practice. His name was originally spelt Akinside, but it was soon realised that its sound was unfortunate for one practising medicine, and a change was made. He was satirised in "Peregrine Pickle," by Smollett, a famous truant.

TOBIAS GEORGE SMOLLETT (1721–1771) studied at the University of Glasgow and was there apprenticed to a surgeon. At the age of 18 he sought his fortune in England, and brought with him a tragedy "The Regicide," the very worst effort of his pen. The failure of this wretched play became a stock grievance throughout his life; he was, indeed, reduced to starvation until by influence he obtained the post of surgeon's mate on H.M.S. *Cumberland*, sent to attack Cartagena. In "Roderick Random," licentious though it is, he has left an historic account of the miseries endured by sailors and soldiers alike in that campaign. On his return he began practice in Downing-street, and "attracted more attention as a wit than as a leech," but he had an important share in the revision of Smellie's "Midwifery," the standard book of that time. In 1750 he took the degree of M.D. at Aberdeen, and a year later published "Peregrine Pickle." Like its predecessor, it has no plot; and is merely a string of adventures loosely held together, but the wealth of amusing incident and the rapidly moving crowd of eccentric figures atone for much coarseness. Two years later he abandoned medicine for literature, and acquired fame and a fortune which he lavishly squandered. Hume likened him to a cocoa-nut—"rough outside, but full of human kindness within." His powers of observation and brilliancy of description have rarely been equalled in imaginative literature.

Best-known and perhaps best-beloved of all literary truants is OLIVER GOLDSMITH (1728–1774). There is, however, some doubt as to whether Goldsmith was ever justified in describing himself as doctor. Admission to the church, the calling of his father and brother, being refused, he was then intended for the law. He was financed by a generous uncle with the sum of £50, lost at once in a gaming house. A little money was collected for him, and at the age of 24 he became a student at Edinburgh, spending 18 months in the acquisition of some knowledge of chemistry and biology. From there he drifted to Leyden where he remained for more than a year leaving with little knowledge of medicine, with only the clothes he wore and a flute. He wandered through France, Switzerland, and Italy, living on charity, casual gifts, and the frequent support given by monasteries:—

> "Remote, unfriended, melancholy, slow
> Or by the lazy Scheldt or wandering Po
> My fortune leads to traverse realms alone
> And find no spot of all the world my own."

In 1756 he returned to England, penniless, friendless, with a medical degree obtained somewhere, and attested only by his own unsupported statement. He practised for a time in Bankside, Southwark, as physician to the poor. Amongst his patients was a printer's workman through whose influence with Samuel Richardson Goldsmith was appointed corrector to the press in Salisbury-court. To earn a pittance he later became usher in a school, and afterwards obtained a medical appointment with the East India Company, which subsequently revoked it. He presented himself then for examination for the post of "mate" to a hospital; but even for this humble post he was rejected. Turning to literature for a pittance he found immortality. His farce "She Stoops to Conquer," is incomparable. The "Vicar of Wakefield" will be read so long as our language lasts. His poems, his plays, indeed all his writings, show simplicity and austerity, with an engaging beauty. He was friend, if often the butt of Johnson, Garrick, Reynolds, Burke, and others. The contrast between his written and spoken word is a puzzle to all. Garrick wrote of him:—

> "Here lies Nolly Goldsmith, for shortness called Noll,
> Who wrote like an angel, but talked like poor Poll."

But his companionship meant much to great men. When he died Burke burst into tears, and Reynolds laid aside his brush for many days. It was supposed that his death was hastened by indiscriminate attachment to James's powder.

Other Famous Truants

[Among other truants to literature of whom the lecturer discoursed we find the names of Edward Jenner, the discoverer of vaccination, alluded to as "in a very minor sense a poet"; George Crabbe "of all men truant from medicine professionally the most incompetent," but described by Byron as "Nature's sternest painter yet the best"; the famous German poet Schiller; Keats, "One whose instincts and faculties were more finely poetical than those of any of his contemporaries which included Byron, Scott, and Wordsworth"; Peter Mark Roget, author of the "Thesaurus"; John Brown of the delightful "Horæ Subsecivæ"; Sir Henry Thompson, surgeon, artist, and novelist; Conan Doyle; Robert Bridges, who retired from practice

at the age of 37 to become later Poet Laureate; Ronald Ross, of malaria fame, who wrote poetry, prose, and mathematical exercises; Oliver Wendell Holmes; Weir Mitchell; Sir Francis Seymour Haden, the famous etcher. Other medical truants described included the explorers Mungo Park and Livingstone, and Henry Jones, who as "Cavendish" was the supreme authority on whist. Lord Moynihan concluded:—]

I have given a brief and imperfect record of some of the truants from medicine who have helped to create or develop our own or other branches of science, who have been greatly distinguished in law, literature, or elsewhere. Their careers illustrate the influence of scientific training upon all mental activity, no matter in what field it may be expended. The habits early inculcated of acute and accurate observation, orderly and relevant arrangement of thought, close criticism of every stage in the manifold processes leading to judgment and decision, conciseness in final expression, and impeccable intellectual integrity throughout are for many of us acquired with infinite difficulty, but, once made our own, may be worn with natural ease and appear almost automatic. A scientific training is useful, not only in the work of an arduous and scientific profession, but in all other callings into which by accident or deliberate intention a man may chance to wander.

BUCHAREST

(FROM OUR OWN CORRESPONDENT)

JUVENILES AND THE LAW

THE new penal code, to be issued shortly, is very liberal to juveniles. Those under 14 are regarded as children and cannot be held responsible for their misdeeds. Adolescents between 14 and 19 can be blamed only if there is evidence of their being possessed of full powers of judgment when committing the offence. If they are not held responsible, the authorities, after a preliminary study of the circumstances, may resort to the following measures: They may first instruct the family to exert greater supervision, or the director of the school may be asked to apply discipline. If there are no parents, or if they are unsuitable, supervision is entrusted to other relatives. In their absence the child may be placed in charge of another reliable person or of a suitable institution. If neither of these is possible the adolescent is sent into a reformatory. These measures hold good not only up to the age of 19 but to the end of the twenty-first year. Abnormal, weak-minded, and sick juveniles can be treated in special institutions. If the adolescent was fully capable of judgment when committing the crime, as a safety measure he is kept under supervision or sent into a reformatory, or as a punishment he may be publicly reprimanded and sentenced to light imprisonment. Supervision is for one year, and if the youth does not improve during this time he may be sent to a reformatory or sentenced to light imprisonment. With good conduct the board of the reformatory may release him on probation for two years, after which he is entirely free; cases of bad conduct are kept in the reformatory until the twenty-first year. Terms of imprisonment for felony are from 3 to 15 years, and for misdemeanour half the adult sentences, with a maximum of 3 years. Subjects under 16 cannot be sentenced to more than 10 years. They are placed in special institutions. After two-thirds of the sentence, they may be discharged with conditional liberty, but after release from gaol a juvenile may be sent to a reformatory until he becomes of age. The care of those released is in the hands of a society.

LAYMEN AND THE DIRECTION OF MEDICAL AFFAIRS

Some paragraphs of the new law on public administration allow the magistrates to interfere in organisation of public health institutions. It is obvious that this intervention would harm the normal progress of public health institutions. On the other hand, the new law does not stipulate that the administrative magistrates should hear the opinion of their medical advisers before bringing in any public health measure. This induced the Medical Association to make representations to the Prime Minister, the Minister of Public Health, and the Speaker of the Chamber of Deputies requesting, first, that in questions of public interest the health officer should be consulted, and that he shall have a place on all councils where questions relating to public health and hygiene are discussed. Secondly, that the medical officers, who through the new law are subordinated to the county prefect, should remain, as hitherto, under the control of the Ministry of Health; although the new law empowers the prefects to supervise medical institutions, they are not competent to decide medical questions. Thirdly, the local chief constable may be able to instruct the physician at best to hold lectures of public health interest, but he cannot give instructions in any other direction, having no qualification in matters of public health.

MEDICAL REFORMS IN ALBANIA

In the post-war years public health in general and the competency of physicians in particular have advanced a great deal in Albania. The State is granting a great number of scholarships for medical students to study abroad, so that on their return they may introduce Western advances. The latest achievement is a new Bill that lays down rules and regulations for medical practice and establishes a medical chamber. Hitherto quacks and magicians could practise in Albania to their hearts' content, but the new law will apply very strict measures against them. According to the Bill foreign physicians may practise in Albania only with the Government's permission, which is given only in exceptional cases, because the country is amply supplied with its own doctors.

Prof. Pierre Duval, of the University of Paris, whose specialty is gastro-intestinal surgery, radiology of the digestive tract, and war surgery, was a guest of the University of Bucharest for eight days, and during this time he delivered several addresses.

On the initiative of Dr. M. Liviu Popovici, professor of pædiatrics at the University of Cluj, capital of Transylvania, a new society has been formed for the furtherance of pædiatrics. It intends to hold public lectures to enlighten the public on the education, for instance, of nervous and mentally deficient children. The first president of the society, which has 40 members, is Prof. Popovici. It intends to publish a quarterly bulletin.

The International Society for Medical History has elected Dr. Victor Gomoiu, the founder of the Rumanian Medical History Society, as president for the next five years.

OBITUARY

JOSEPH DANIEL McFEELY, F.R.C.S.I., D.P.H.

THE death occurred at Woolton on May 15th of Dr. Daniel McFeely who had much important medical work to his credit first in Ireland and for the last 30 years in Liverpool. He was born in Londonderry, the son of a Londonderry merchant, and educated at the Letterkenny High School, at Trinity College, Dublin, and the Catholic University, Dublin. He obtained the Irish double diploma in 1885, and was for a time resident surgeon in the Jervis-street Hospital, Dublin, and later civil surgeon at the Military Hospital, Cork. In 1896 he became F.R.C.S.I., took the public health diploma, and was appointed coroner and medical officer of health for County Donegal. He was also appointed surgeon to the Mercer's Hospital, a post which he filled for seven years. At the Royal College of Surgeons in Ireland he was a member of the council and of the court of examiners, while to his other appointments he at one time added that of assistant surgeon to the National Maternity Hospital. In 1904 he removed to Liverpool, where he was appointed visiting surgeon at the Mill-road Infirmary and carried on a considerable private practice with headquarters in Shaw-street. Among his other activities he worked as emigration officer to the Catholic Emigration Association in respect of children emigrating to Canada. He contributed occasionally to medical journals and wrote an interesting little book composed of his reminiscences as a practitioner. At the close of his life Dr. McFeely lost his sight, and latterly had resided at Holly House, Woolton, where he died. Dr. McFeely married Sarah, daughter of the late J. C. Lenen, and leaves four sons.

JOHN HERBERT GODSON, M.B. Camb., D.P.H.

Dr. John Godson, who died early in the month, was very well known in the Cheadle district where he was born and where the family had a large professional connexion. He was the second son of the late Dr. Alfred Godson, and had two brothers, medical men. He was educated at Aldenham and Cambridge, and graduated as M.B., B.Chir. in 1893, completing his medical training at Guy's Hospital. There he was resident obstetrician, while he also held posts at the Great Ormond-street Children's Hospital and the East London Children's Hospital. He then joined his father in practice, whom he succeeded as medical officer of health for the Cheadle and Gatley urban district, a post which he held until just before his death. Dr. Godson was prominent in the promotion of the social activities of the neighbourhood; he was a keen churchman, a trustee of the literary institute, and a supporter of the local athletic clubs. He was 69 years of age.

THEODORE FRANCIS DILLON, M.B. R.U.I.

Dr. Theodore Dillon, who died recently in Cardiff, was educated at Black Rock College, Dublin, and Queen's College, Cork, where he graduated as M.B., B.Ch. in 1898. He was holding a medical appointment at the Ophthalmic Hospital in Cork when he entered the Army Medical Corps to serve in the Boer war. Later he went into general practice in Cardiff where he practised in partnership with the late Dr. Cantillon for over 30 years. He received a commission in the R.A.M.C. during the European war, and served in France and Gallipoli. Dr. Dillon was a devout Catholic and deeply interested in the affairs of his church, and was also vice-president of the local branch of the Ancient Order of Hibernians. He was 64 years old at the time of his death.

HENRY JOHN MACKESON WYLLYS, F.R.C.S. Edin.

Dr. Mackeson Wyllys, who died at his residence in Yarmouth on May 11th, was a prominent member of the local medical profession, the son of the late Dr. Wyllys of Yarmouth and brother of Dr. William Wyllys of that town. He received his medical training in Glasgow, and on qualification was for a time house surgeon at the Norfolk and Norwich Hospital. In 1906, on the retirement of his father, he went into partnership with his brother in Yarmouth, where in due course he held a number of professioanl appointments. He became senior surgeon to the Yarmouth Hospital, and was a life member of the committee of governors and chairman of the nursing committee. He was an honorary member of the Eastern Counties Convalescent Home for Children, and in addition to his professional relations was well known in the town for his support of the cricket club. He was also a noticeable figure for his reluctance to give up the horse and gig for the motor-car. Dr. Wyllys married Miss Ballance, sister of the late Sir Charles and late Sir Hamilton Ballance, and his son is a prominent cricketer.

MOSES UMANSKI, M.D. Berne, L.S.A.

Dr. Moses Umanski, who died in London recently, was a Russian, the son of Jacob Umanski, and was born in 1862 at Ekaterinoslav and educated in the University of Kharkoff and in Berne and Berlin. He graduated in medicine at Berne and took the diploma of medicine at the University of Kharkoff in 1886 and shortly afterwards came to England. He qualified as L.S.A. Lond. in 1895 and settled in Leeds where he was medical officer to the Jewish Sick Charity and various friendly societies, medical officer to the Leeds Jewish Maternity Charity, and medical superintendent of the Herzl-Moser Memorial Home, for the dying, a post he held for 20 years, from the foundation of the institution. He spent the last ten years of his life in London, where he won the regard of many by his amiable qualities. He was a great champion of the Zionist movement.

PAUL POWER, M.B. N.U.I.

THE sudden death is announced of Dr. Paul Power, late secretary of the International Medical Agency, Bedford-street, W.C. Dr. Power was born at Tulla, Co. Clare, and educated at St. Mungo's College, from whence he entered the University of Dublin and graduated as M.B., B.Ch., B.A.O. in October, 1928. He volunteered for service in Abyssinia shortly after the outbreak of hostilities and was attached to the British Red Cross unit. He was at Diredawa for a considerable period, and was presented to the Emperor who heartily thanked him for his services. His death occurred from malaria at Aden, while homeward bound. He was only 33 years of age and had fine prospects in practice before him.

CORRESPONDENCE

INFLAMMABLE DRESSINGS

To the Editor of THE LANCET

SIR,—My council has asked me to report a case it recently considered which appears to contain a significant pointer to members of the profession engaged in general and surgical practice. A patient sustained a slight injury as a result of the puncture of one of his fingers by a chicken bone. This was followed by cellulitis which required frequent and regular dressing. These dressings produced, as they commonly do, a sodden condition of the tissues which our member thought would be corrected by application of a spirit dressing. He accordingly applied a spirit dressing and asked the patient to return within 48 hours for a further inspection of the infected part. The patient had no sooner left the surgery than he attempted to light a cigarette. The dressing is said to have "blown up," and he quickly returned, holding aloft a hand which resembled a flaming torch. Our member dealt with the situation promptly and efficiently and provided the necessary treatment.

It is to be noted, incidentally, that the settlement of this case involved the Medical Defence Union in the expenditure of a considerable sum of money. The moral to be drawn from the foregoing unfortunate experience is that patients who receive spirit dressings should be warned of the dangers of flame or fire of any kind which is likely to ignite the dressing and thereby cause grievous damage.

I am, Sir, yours faithfully,

ROBT. FORBES,
Secretary, Medical Defence Union.

49, Bedford-square, London, W.C., May 25th.

MENTAL SICKNESS AND CERTIFICATION

To the Editor of THE LANCET

SIR,—I appreciate that, as Dr. Rees informs us in your issue of May 23rd, it is the intention of the Institute of Medical Psychology to receive only psychoneurotic cases for treatment, but that does not dispose of the point I raised. The law makes no distinction between psychoneurotic and psychotic cases. Patients who are certifiable, even if diagnosed psychoneurotic, are subject to the legal complications mentioned in my previous letter.

I am, Sir, yours faithfully,

Wimpole-street, W., May 23rd. FREDERICK DILLON.

VISITS TO RUSSIA

To the Editor of THE LANCET

SIR,—It will, we feel sure, be of interest to your readers to know that special arrangements are being made, by the Society for Cultural Relations, to enable doctors and surgeons to carry out a study of the medical services in Soviet Russia. As is probably well known, the Russian health services are organised on a different basis from those in this country. Competent observers have expressed the opinion that the results achieved are worthy of notice. Sir Arthur Newsholme and John A. Kingsbury, for instance, state in their book "Red Medicine," that Soviet Russia "has removed the doctor almost entirely from the field of monetary competition, and has thus abolished a chief source of inadequate medical service."

It is proposed that groups should leave London on June 20th and July 25th for three or four weeks. The programme will give ample opportunity for studying the organisation of the medical services as a whole, and in addition facilities will be given to enable individual members of the groups to investigate the research and practical work being done in the particular branches of medicine in which they are themselves specialists. Full details of the arrangements can be obtained from the Secretary, S.C.R., 3, Bedford-place, W.C.1.

We are, Sir, yours faithfully,

SOMERVILLE HASTINGS,
JULIAN S. HUXLEY,
J. R. MARRACK.

May 20th.

SELENIUM TREATMENT OF CANCER

To the Editor of THE LANCET

SIR,—The report from the Royal Cancer Hospital on the selenide treatment of cancer in your issue of May 23rd demands some comment. When I received a typed copy in February of this year I returned the following reply: "It is considered highly regrettable that errors of prime importance were allowed to persist throughout the series." I pointed out these errors to the Bristol Royal Infirmary Cancer Committee; in the interest of cancer therapy it is considered desirable that they should be more widely circulated.

The Cancer Hospital sent to Bristol a youngish woman graduate, of the house-physician standing, for a short period to learn what she could about the method. Every facility was given her to learn, and errors of capital importance, such as immediate reaction and rigors after injection, were carefully stressed. The X ray dosage was taught as well as was possible to her and to Prof. Morison who was only available for a few minutes. No communication or request for guidance was made during the "trial."

The report states that the initial dose of S.Se. was 0·5 to 1 c.cm., that increments were of the same amount and that immediate reaction, or rigors, occurred every time it was given. The initial dose was therefore about 25 per cent. of what is recommended, and with such increments the optimal dose would rarely have been attained before the eight X ray treatments had terminated. Then again, immediate reaction, such as followed each time, would prevent the optimal dose of colloid being ascertained. The total dosage of colloid noted in the table is very low, less than one-third of what would be given here for these types and durations. As regards the colloid R.A.S. It is stated that the initial dose was 1 c.cm. and that it was increased by the same amount each week. In the article (Brit. Jour. Surg., 1934, xxi., 619) it is advised that the initial dose should be two-thirds of the last dose of S.Se. For example, a case of rectal carcinoma would probably end with 12 c.cm. of S.Se.; the initial dose of R.A.S. would be 8 c.cm., and in the three weeks after X radiation he would receive at least 24 c.cm. of R.A.S.—but at the Cancer Hospital he would only be given a total of 6 c.cm.

The X ray technique was standardised, each case received 75 r. It is advised that the X ray dosage should be altered to meet the findings in each case, and, at Bristol, doses from 30 to 150 r. are given. Patients only received eight séances, although it is advised that séances given before attaining the optimal dose of colloid should not be counted. This standardisation is possibly a corollary to immediate reaction or rigors, for neither optimal colloid nor X ray dosage could possibly be ascertained if rigors

occurred. Since X ray action is the product of séances and colloid dosage, the amount of ionisation per patient would not be more than about 20 per cent. of the optimal.

Much space is given to a case developing sulphæmoglobinæmia. No example of this has occurred amongst the hundreds treated at Bristol, but we guard very carefully against rigors and immediate reaction. It is possible that sulphæmoglobinæmia may follow faulty technique with some frequency.

The finding that the hæmatological reactions were not as are found here is not surprising; it is regarded as further evidence that the treatment given at the Cancer Hospital differed widely from that given at Bristol.

To sum up the more glaring of the errors: the dosages of colloid were far too low and chemical alteration occurred during injection; the X ray dosage was standardised, and, with the low dosage of colloid, must have been almost inoperative. Though these errors were pointed out, no effort was made to check them—from which one may make inferences better left unwritten. In spite of the fact that practically every error possible was stereotyped through the series, the results are not reported as being completely negative. It is therefore confidently concluded that no clinic need expect worse results than this report contains, and that genuine adherence to the published technique is likely to benefit the cancer patient to a degree comparable with that found here. Lastly, one is justified to ask why this burlesque was allowed to be published; a comparison of the method described with the original should have shown such discrepancies that to call it an independent test is far from the truth.

I am, Sir, yours faithfully,

Bristol, May 23rd. A. T. TODD.

PROPHYLACTIC ENUCLEATION OF LOWER WISDOM TOOTH FOLLICLES

To the Editor of THE LANCET

SIR,—Mr. Bowdler Henry, in THE LANCET of April 18th, recommends the early removal of the germ of the lower third molar in cases where there is evidence that there will be a subsequent impaction, thereby avoiding all the dangers and difficulties which may follow the ordinary operation for the removal of the impacted tooth. The chief objection, however, to this operation is the difficulty of deciding whether a tooth germ will be subsequently impacted or not. It may appear to be irregularly placed at an early stage and yet erupt normally later. On the other hand, it may appear to be normal and fail to erupt when fully developed. It follows, therefore, that many of these operations may be performed on tooth germs which would erupt normally if allowed to develop or, alternatively, would develop in such a manner that their subsequent removal would be simple.

It would appear to be necessary, therefore, before accepting the prophylactic operation as a routine measure, to ascertain whether it is possible to diagnose with certainty a future impaction of the type which would necessitate a severe operation, and, if, so whether the tooth germs of probable impactions of this type are not themselves in such positions that their removal would present difficulties and dangers comparable with those encountered in the removal of impacted teeth. It must also be remembered that the great majority of impacted third molars can be removed with very little local or general disturbance, and that it is a question whether the fatalities and difficulties which occur are not due to some idiosyncrasy of the patient or to local conditions which often occur in the third molar region when there is no impaction at all.

I am, Sir, yours faithfully,

Rickmansworth, May 15th. S. WILSON CHARLES.

PORTRAITS OF PUBLIC HEALTH PIONEERS

To the Editor of THE LANCET

SIR,—In connexion with the public health section of our museum here, I am making a collection of the portraits of past pioneers in public health, and already have secured a considerable number. There are, however, several of whom so far I have been unable to trace portraits, and am venturing to append a list of these in the hope that some of your readers may be able to give me references to publications where any of these can be found, or in the event of their possessing portraits of any of them, would be willing to lend the same to me for copying.

Those particularly required are:

George Baker	1722–1809
Sir Gilbert Blane	1749–1834
Edwin Lankester	1814–1874
John Haygarth (of Chester) ..	1740–1827
Thomas Percival (of Manchester) ..	1740–1804
C. Turner Thackrah (of Leeds) ..	Died 1851

Any portraits entrusted to me would be carefully copied and returned with the least possible delay.

I am, Sir, yours faithfully,

H. B. NEWHAM,
Director of the Museum.

London School of Hygiene and Tropical Medicine, Keppel-street, (Gower-street), W.C.1, May 22nd.

TUBERCULOUS CERVICAL GLANDS

To the Editor of THE LANCET

SIR,—I am interested to notice that Mr. Vernon Thompson has again raised the question of the propriety of operating in cases of tuberculous cervical glands. This matter has concerned me for many years and I have satisfied myself that there are circumstances in which an operation is the most important event in the treatment of some cases, whereas in others it is only a subsidiary and occasional requirement.

The whole question turns on the portal of entry in any individual case. When this route is the nasopharynx, then the tuberculosis of the corresponding cervical glands is probably a first and localised result of such infection and in these circumstances, the focus having been dealt with, the glands are best removed by radical operation. If, on the other hand, the glands in the neck are merely an outlying part of an infection which owes its origin to a portal in the mediastinum or mesentery, then the most important requirement is the efficient treatment of the individual to raise the resistance against the focus to the highest possible pitch. Even in the latter group, there may be glands that require excision because they break down or are the seat of repeated periadenitis, or are so obvious as to be an eyesore.

I have tried to set these matters out in some sort of order in various communications, especially in a paper in the *Newcastle Medical Journal* for July, 1931. I find that many members of the profession are still without an understanding of a pathological basis which might be a guide to successful treatment.

I am, Sir, yours faithfully,

G. GREY TURNER,
Professor of Surgery, British Postgraduate Medical School.

May 20th.

SYNTROPAN IN SEA-SICKNESS

To the Editor of THE LANCET

SIR,—I have just returned from a ten weeks' voyage to South America as ship's surgeon and before leaving was induced by Prof. Stanton Hicks's letter, published in THE LANCET of Jan. 25th last, to take with me a supply of a new sea-sickness preparation produced by the Hoffmann-La Roche Chemical Works Ltd. The preparation is said to contain an antispasmodic of an atropine-like nature (Syntropan) and a mild sedative (Sedormid), but I may say that it was with a certain amount of scepticism that I used it, having heard of so many vaunted cures for this very distressing ailment.

Anyway I tried it out on about a dozen cases and in all with success. It had an immediate effect in all cases and those who were travelling under the best conditions reacted, as one would expect, most satisfactorily. Two of the crew who were sleeping right aft and above the propellers were the slowest in being cured, but the passengers only required a tablet or two and were then all right again and, moreover, had no recurrence although the sea was very rough at times. Feeling a little squeamish myself one day, I thought I would try it on myself. Although not really sick, I was not at all well, took one tablet, and in twenty minutes all feeling of discomfort had gone. I had no after-effects, no dryness of the mouth, no mydriasis, no palpitation.

All those to whom I gave the drug agreed that they felt immediate relief. I can cordially recommend it to other ship's surgeons who will gain great kudos from their seasick patients and win their gratitude for being relieved of what is a most distressing and discomforting ailment.

I am, Sir, yours faithfully,

THOS. NORTH, M.D., F.R.C.S.I.

Chiltern-court, N.W., May 25th.

FAMILY MEDICAL INSURANCE

To the Editor of THE LANCET

SIR,—I would like to make some observations on your very kind review of my book "Family Medical Insurance." Your reviewer states that the crucial chapter embodying the scheme whereby the "F.M.I." scheme is to be effected is "specific in certain immaterial details, but vague in what seem to be essentials for its comprehension." I admit the absence of financial or administrative details, but there are no statistical data available upon which to quote figures even provisionally for such services as proposed, while administrative details await investigation and coöperation of existing institutions and bodies. As is stated in the foreword, this is not a cut-and-dried scheme and those associated with me seek criticism and help. The main concern is that the problems raised shall not be shelved.

It is stated that the "F.M.I." scheme accentuates "the modern tendency to uncoördinated and disintegrated specialism." The whole object of the scheme is to improve the general practitioner service by a complete coördination and use of the specialties, with a consequent improvement, it is maintained, of the general practitioner's economic problems. This coördination is to be through existing institutions: the proposed clinics, wherever they be, are not mainly treatment centres but rather special investigation centres and "clearing houses." The report of the Scottish Consultative Council in Medical and Allied Services, which your reviewer quotes, expresses as far as it is cited exactly the "F.M.I." principles.

The statement that periodical examinations, as proposed under the scheme, would result in the general practitioner becoming "a sort of middleman whose services are tolerated only because of their value in emergency" is hardly fair as it is definitely stated that the findings of such examinations "will be embodied in a report to the practitioner." They will not be given to the patient, and the doctor is of course free to adopt within reason what attitude he likes to the report.

While thanking you for your constructive criticism may I appeal for interest and support to enable us to carry out the spade work necessary for obtaining statistical and other data, and for the formation of a representative body to keep these problems before both the professional and lay citizen?

I am, Sir, yours faithfully,

Harley-street, W., May 25th. J. LACHLAN-COPE.

INDUCTION OF PREMATURE LABOUR

To the Editor of THE LANCET

SIR,—In your leading article last week (p. 1191) you write: "It will be recalled that Mr. J. H. Peel recently published in our columns an account of a hundred consecutive cases in which induction had been performed for disproportion in primigravidæ." Reference to your columns (April 25th, 1936) shows that only *sixty* of the hundred cases were primigravidæ. The children of these primigravidæ induced by bougies had a stillbirth-rate of 20·8 per cent., a result due, I think, in part to the small number of cases and in part to the use of forceps to deliver (in no less than 35·8 per cent.). Of 85 primigravidæ induced at University College Hospital 10 children died (11·7 per cent.). Large statistics show that the maternal mortality-rate of induction in these cases is about 0·2 per cent., the infant mortality-rate about 12 per cent. What is wanted is not "negative evidence" but positive evidence, furnished by large statistics, showing that "trial labour" with its consequential forceps, Cæsarean section, or craniotomy can give equally good or better results.

I am, Sir, yours faithfully,

HERBERT R. SPENCER.

Bickenhall Mansions, W., May 23rd.

OBSERVATIONS ON PEPTIC ULCER

To the Editor of THE LANCET

SIR,—Dr. D. T. Davies's Bradshaw lecture, published in your issues of March 7th and 14th, contains statements and views which I cannot fully accept. May I offer the following comments?

Twenty years ago, at the 1st medical clinic of the University of Budapest, the healing without operation of a peptic ulcer of the lesser curvature, perforating between the layers of the lesser omentum, was observed. The size of the ulcer shadow greatly diminished after routine dietetic treatment,[1] and this accidental observation led us to the idea that callous and penetrating ulcers of the lesser curvature—which at that time were considered to be amenable only to surgical therapy—might possibly be cured in a simpler way, by instituting a careful dietetic regimen before perforation occurred. We found at that time 326 cases of peptic ulcer among 3500 patients coming to the clinic complaining of gastric discomfort, and in 35 cases of callous and penetrating ulcers of the lesser curvature we were able to follow systematically the course of the illness and the size of the ulcer.

[1] Rosenthal, E.: Berlin. klin. Woch., 1916, No. 34.

In all of these a progressive decrease in the size of the ulcer shadow or (in nearly all) complete disappearance of the ulcer niche was noted. When the late Prof. Bálint and I reported our experience before the Royal Hungarian Medical Association in 1917 I laid stress on the fact that callous ulcers of the lesser curvature can be cured by conservative regimen. This first observation of mine has since been corroborated, and here I need only mention that Schindler has been able to demonstrate by gastroscopic examination that disappearance of the ulcer shadow, as observed on the X ray screen, is tantamount to healing of the ulcer. Though I published my above-mentioned observations, together with some others concerning the treatment of peptic ulcer, somewhat later—in Hungarian in 1918, whereas my German monograph [2] appeared in Berlin in 1920—there can be no doubt that Davies is mistaken if, as appears from his lecture, he credits Nicholas and Moncrieff,[3] in 1927, with the first description of disappearance of the ulcer shadow after conservative treatment. Our observations on 35 cases were soon followed by accounts of 4 cases by Hamburger [4] of Chicago, and of 6 cases by Oehnell [5] of Stockholm. In my opinion the only reliable criterion of the healing of an ulcer is the disappearance of the ulcer shadow on X ray examination: this will explain my having gone at some length into its historical side.

I agree with Davies in attributing an important rôle to nervous impulses in the genesis and chronicity of peptic ulcers. I must add, however, that on the other hand favourable influences may considerably promote the healing of ulcers by way of the nervous system. This fact I emphasised in a post-graduate lecture given a few years ago. The chief source of unfavourable nervous influences is occupational worry and strain, and therefore I have always insisted on the importance of bed rest in ulcer treatment; hospital care is much to be preferred. In this way proper treatment of the ulcer may be better carried out, and, in addition, removal of the patient from his home is likely to be an advantage rather than not. Of course, there have been cases in which I have been obliged to adopt ambulatory treatment, because the patient could not afford to stay in bed for 4–6 weeks at home, or, still less, in hospital. With ambulatory treatment, however, symptoms will improve much more slowly and there is also considerable delay in disappearance of the ulcer shadow. Therefore I cannot endorse ambulatory treatment of ulcers as suggested by some authors and also by Davies.

Finally I wish to add some remarks on the acidity values as presented by Davies. In the monograph mentioned I pointed out that a true picture of acidity values associated with peptic ulcer can be obtained only if the data are arranged in separate groups according to the various locations of ulcers. Survey of unspecified data is not at all instructive; but if the percentage of hyperacid and non-hyperacid (normacid, hypacid, and anacid) ulcers on the lesser curvature, in the prepyloric region, at the pylorus, and in the duodenum is examined, interesting data will be obtained. Thus duodenal and pyloric ulcers are often associated with hyperacidity (70 and 55 per cent. respectively), whereas with ulcers of the prepyloric region and of the lesser curvature increased secretion is much less common (28 and 30 per cent. respectively). It will be observed, first, that the proportion of hyperacid cases varies with the site of the ulcer, a marked increase being observed towards the duodenum; and secondly—and not less important—that in a considerable number of ulcers there is normal, decreased, or deficient secretion of acid. These facts have caused me to abandon the inviting and almost traditional theory of ætiological relationship between hyperacidity and peptic ulcer. Cholelithiasis, too, is often associated with excessive acid values; but the coincidence of peptic ulcer and cholelithiasis is rare.

For the time being the problem of the causation of peptic ulcer is not completely understood. The importance of changes in the internal milieu, emphasised by Bálint and possibly supported by recent observations of Dodds, cannot be evaluated until further proof is available. Meanwhile, in order to promote unprejudiced development of our views, it seems best to consider that a strict ætiological relationship between hyperacidity and peptic ulcer has not been definitely established.

I am, Sir, yours faithfully,

Budapest, May 6th. EUGENE ROSENTHAL.

[2] Rosenthal, E.: Die Diagnose und Therapie der Geschwüre des Magens und Duodenums, Berlin, 1920.
[3] Nicholas, F. G., and Moncrieff, A. A.: Brit. Med. Jour., 1927, i., 999.
[4] Hamburger, W. W.: Amer. Jour. Med. Sci., 1918, p. 204.
[5] Oehnell, H.: Arch. f. Verdauungskrankh., 1918.

PUERPERAL SCARLET FEVER

To the Editor of THE LANCET

SIR,—The article by Drs. Burton and Weir in your issue of May 16th on the inter-relationships of streptococcal disease, and your leading article in the same issue, have led me to recall an experience of my own fifty years or more ago. The relations of scarlet fever and puerperal fever were then being hotly debated in the medical papers; some of the best known obstetricians in London took part in this discussion and, as was to be expected in such a difficult question, expressed widely different opinions.

At that time I was (unqualified) assistant in a practice in an agricultural district which consisted of five separate villages distant from each other about three miles. In the month of February I saw in one of these villages a severe case of scarlet fever; the medical officer of health failed to trace its origin, and there had been no case in the district for months. Within a week I took scarlet fever (I had attended scores of cases before) and the next day the young son of my principal was taken ill with a temperature of 105·2° F. followed by convulsions and died next day. He had no rash. My attack was mild, my rash was of the slightest, and I kept bed for only one day, and in two days more I went my rounds quite well without faucial or nasal discharge. Within a week I was sent at night to a case of confinement in an isolated village. The case was easy and normal and nothing was done to the patient. The following day (32 hours after confinement) the patient was very well, but the day after the husband came in haste on horseback to fetch me, when I found the woman with a temperature of 105·2° F., sore-throat, very dry strawberry tongue, and delirium. She died the next day. Two days afterwards three children in the same house came out with mild scarlet fever. The outbreak did not spread further.

This was perhaps the most tragic event in my long professional life, and it so impressed me that I have hardly referred to it since, except as a warning to my assistants. The causal connexion between scarlet fever and puerperal fever was indelibly imprinted on my mind. I am, Sir, yours faithfully,

Ystalyfera, Swansea, May 20th. W. J. LEWIS.

TEST-MEALS IN THE DIAGNOSIS OF GASTRIC CANCER

To the Editor of THE LANCET

SIR,—Two articles in your issues of May 16th and 23rd reveal a striking difference of opinion about the value of test-meals in the diagnosis of gastric cancer. Sir James Walton (p. 1101) apparently regards test-meals as valuable aids to diagnosis. Prof. Anschütz (p. 1175) does not even mention them, but relies on a combination of radiology and the occult blood test. While no one would deny the importance of the latter, it does seem strange that one should expect to learn more about the stomach from the stools than from the gastric contents.

Having recently made a statistical inquiry into this very subject (THE LANCET, 1934, ii., 471), may I suggest that the test-meal *is* of value in diagnosing gastric cancer, particularly in those cases exhibiting achlorhydria with a doubtful radiological picture. The point as I see it is briefly this: Achlorhydria by itself means little, for it will be found in from 10 to 25 per cent. of normal persons in the cancer age-period, but *achlorhydria plus gastric deformity of any type* is extremely suggestive of carcinoma. This is because only about 2 per cent. of benign ulcers have achlorhydria—even less if histamine is used—while the incidence of achlorhydria in carcinoma of the stomach is about 70 per cent. The well-known changes in the resting juice must also be mentioned, although they are perhaps rarely an early manifestation of malignant disease.

I feel that these considerations indicate sufficiently the diagnostic value of the test-meal in all cases where the stomach is abnormal radiologically. Even a "simple" gastric ulcer crater should be viewed with suspicion if associated with achlorhydria.

I am, Sir, yours faithfully,

N. F. MACLAGAN.

Westminster Hospital, S.W., May 26th.

THE BIOCHEMICAL LESION

To the Editor of THE LANCET

SIR,—The lecture by Prof. Peters in your last issue is important to students of nervous pathology. He shows very clearly that serious organic changes will result from a biochemical lesion; that, to quote his words, "the absence of an important factor in the development of energy from carbohydrates would be sufficient to stop the normal functioning of some groups of nerve-cells. Those which normally had most work to do might be expected to run out of their supply of the catalyst B_1 sooner than others." Replace this catalyst by some enzyme necessary to normal tissue oxidations, and of which there is a certain deficiency in an individual, and the result will be such changes as are met with in the psychoses, especially if any extra strain is thrown on certain cell groups from which the greatest energy is required. In the treatment of such conditions what the nerve-cell needs above all is rest and freedom from fussy interference.

I am, Sir, yours faithfully,

B. H. SHAW,
Medical Superintendent, Staffordshire Mental Hospital.

May 25th.

PANEL AND CONTRACT PRACTICE

Public Medical Services

THE Essex public medical service, which was founded in 1923 to provide medical attendance on the families of insured persons on a contract basis, has issued its twelfth report. At the end of 1935, after deducting cancellations, there were 16,534 books on which payments were being made, an increase of 1668 over the previous year. These books represent 15,231 adults and 13,725 children, treatment for whom is provided by 263 active and 82 honorary members. The largest totals collected for individual practices were: metropolitan £364, urban £1250, semi-rural £377, and rural £510. The appliances fund gave help in 62 cases, 35 of which were surgical belts, trusses, &c., and the remainder elastic stockings and bandages, special drugs, ambulance charges, doctors' bills, nursing, and massage. On the year's working there is a balance of income over expenditure of £540. Collections totalled £21,207, some £2000 in excess of the previous year, payments to doctors were £16,075, and a sum of £5126 was transferred to office account. The collections would have shown an even better figure but for bad weather and illness among the collectors at the end of December.

A similar service in and around Brighton covers Hove, Portslade, and now Southwick. Its personnel is increasing—88 doctors as compared with 77 at the commencement of the year and 108 pharmacists as against 96. During the year 6489 persons joined the scheme, and accessions average a hundred a week. The participants are of all ages from a few weeks old upwards; medical services have been provided under the scheme for 1015 children under ten years of age.

Benefit Overpayments

The insurance doctor is often the detached friend to whom his insured patients bring their troubles for solution. The alleged non-payment, or under-payment, of sickness benefit is one of the commonest of these troubles and one of its causes may be overlooked by the practitioner when trying to suggest what has gone wrong. One does not often get too much change at a booking office, but it seems that too much sickness benefit is occasionally paid out, and the society concerned then has to do its best to get repayment from the insured person. Clearly it is better if possible to secure this, if necessary in instalments, while the member is well and earning wages, but, if he refuses, other means have to be adopted. The overpayment is a debt due from the member to the society which is entitled to take reasonable steps to recover. But the extent to which a society is entitled as of right to secure the repayment of benefit previously overpaid by withholding benefits which become due later is limited:

(1) to a period within four years of the date on which the overpayment was made;

(2) the deduction must not exceed one-fourth of the amount which would otherwise be payable: it may be claimed

(3) from sickness or disablement benefit only, not from maternity benefit.

In certain cases the right to recover is not restricted

as above—e.g., when excess benefit has been paid in the following circumstances:

(*a*) an advance pending settlement of a compensation claim;

(*b*) an advance to a disabled ex-Service man pending settlement of a claim to a maximum rate disability pension;

(*c*) benefit overpaid to a married woman owing to her failure to notify the society of her marriage.

In the event of the insured person concerned in (*a*) being a woman deduction may be made from maternity benefit payable from her own insurance, and the same applies to (*c*). The benefit rates for married women who continue to be employed are now different from those applying to their unmarried sisters. An overpayment made to a husband cannot however be deducted from maternity benefit payable from *his* insurance in respect of his wife's confinement; for this benefit is the property of the wife.

PUBLIC HEALTH

London Maternity Services

IN a report to the hospitals and medical services committee of the L.C.C. just issued (London: P. S. King and Son. No. 3195. 1*s*.) Sir Frederick Menzies has much of interest to say about the 65,300 confinements which occurred in London in 1934. Rather more than a fifth of these women (13,250) were confined in L.C.C. hospitals, and of these 87 per cent. had received antenatal care at L.C.C. clinics and most of the remainder some supervision by doctors, midwives, or borough clinics. Practically all the 32,000 women attended by voluntary associations had received antenatal care as a condition of attendance. Ample opportunities for regular supervision are available in London through the borough clinics if not through the attendant with whom the woman books for her confinement, and this opportunity is evidently appreciated. The women attend as often as is asked and travel long distances if required. Lapsed cases are very few, and if a woman fails to receive antenatal care in London it is either (*a*) because she belongs to a small and recalcitrant class who think it is not worth while; (*b*) because she is a multipara who is bound by household ties and has lost her fear of childbirth; or (*c*) because she is a single girl deterred for obvious social reasons. Judged by the conditions considered adequate at L.C.C. clinics, the antenatal care provided by experienced midwives may seem inadequate, but it stands the test of success. It seems that certain institutions, such as the East End Maternity Hospital, which claim a low mortality-rate, particularly from toxæmia, had this low rate before routine antenatal care began.

There was little to criticise during the year in the conduct before admission of cases which died in L.C.C. hospitals. Five years ago, it is said, there were twelve deaths where grave criticism could be made of the persons responsible for the treatment provided before admission; in 1934 there were only four such cases. An examination of the notes of the 458 women delivered in hospital who subsequently died and of a large number of others delivered before admission does not show a single case of gross error on the part of a midwife. In fact during the past three years no midwife has been referred by the L.C.C. to the C.M.B. on account of neglect or malpractice.

Lack of reasonable facilities is held to play little part in contributing to the maternal mortality-rate in London. The L.C.C. hospitals are open to all and refuse no patient either for antenatal care, confinement, abortion, or abnormal puerperium. It is the policy of the L.C.C. to make a maternity unit sufficiently large to have a highly skilled resident staff on duty for 24 hours of the 365 days in the year. Certain of the boroughs provide excellent domiciliary services for which there seems to be a diminishing demand. Moreover an ample supply of competent private midwives is available but, it is added, in many cases under present conditions they cannot make an adequate living. The lack of facilities, says Sir Frederick, which seems of most practical importance in London as elsewhere, is that midwives are obliged to send for doctors, suggested by their patients, who may have no special experience in midwifery.

According to this report the preventability of maternal death and the allocation of its blame are by no means so certain and absolute as has been supposed. Insufficient attention has been paid to the fact that the deaths analysed came from districts with widely differing mortality-rates. The maternal mortality-rate, like all other rates in public health, will inevitably be much easier to reduce if above the average than if below the average. Of every two deaths in childbirth one has been regarded as avoidable; it is, Sir Frederick thinks, perhaps nearer the truth to regard 6 to 8 out of 10 deaths in some areas as avoidable, in other areas only one or two.

An interesting paragraph suggests reasons for the fact that the maternal mortality-rate for the East End of London is and always has been lower than for the West End, especially as regards sepsis. This may be explained partly by the higher proportion of primiparæ and of illegitimate births in the western boroughs, partly by the much higher proportion of confinements in hospital in the eastern boroughs.

INFECTIOUS DISEASE

IN ENGLAND AND WALES DURING THE WEEK ENDED MAY 16TH, 1936

Notifications.—The following cases of infectious disease were notified during the week: Small-pox, 1 (Hove); scarlet fever, 2000; diphtheria, 904; enteric fever, 24; pneumonia (primary or influenzal), 887; puerperal fever, 48; puerperal pyrexia, 121; cerebro-spinal fever, 19; acute poliomyelitis, 3; encephalitis lethargica, 4; dysentery, 12; ophthalmia neonatorum, 114. No case of cholera, plague, or typhus fever was notified during the week.

The case of small-pox notified from Hove was included among the four cases in East Sussex on which comment was made last week (p. 1209).

The number of cases in the Infectious Hospitals of the London County Council on May 22nd was 5626, which included: Scarlet fever, 1026; diphtheria, 814; measles, 2561; whooping-cough, 563; puerperal fever, 21 mothers (plus 14 babies); encephalitis lethargica, 284; poliomyelitis, 2. At St. Margaret's Hospital there were 22 babies (plus 12 mothers) with ophthalmia neonatorum.

Deaths.—In 122 great towns, including London, there was no death from small-pox, 1 (0) from enteric fever, 61 (31) from measles, 8 (3) from scarlet fever, 23 (3) from whooping-cough, 28 (4) from diphtheria, 55 (16) from diarrhœa and enteritis under two years, and 42 (10) from influenza. The figures in parentheses are those for London itself.

Leeds reported 4 deaths from measles, Liverpool, Bristol, Gloucester, and Great Yarmouth each 2. Deaths from diphtheria were reported from 20 great towns, 3 from Manchester, no more than 2 from any other large town. Gateshead had 3 deaths from whooping-cough. The only fatal case of typhoid was at Lincoln.

The number of stillbirths notified during the week was 286 (corresponding to a rate of 40 per 1000 total births), including 45 in London.

GENERAL MEDICAL COUNCIL

PRESIDENT'S ADDRESS

IN opening the 143rd session on Tuesday last Sir Norman Walker began by speaking of the loss sustained by the Council through the death of Prof. Francis Dixon and Sir John Marnoch. The former had represented the University of Dublin since 1916 "and as the years went on became probably the best beloved of our members." His successor, Prof. J. W. Bigger, was the third son to follow a father on the Council (the others being Mr. Pridgin Teale and Sir Humphry Rolleston). Besides Dr. Bigger, the new representatives whom the President welcomed were Prof. David Campbell (Aberdeen University) and Prof. E. W. Hey Groves (Royal College of Surgeons of England).

After paying tribute to the work of the late Mr. Farquhar Macrae, inspector of examinations, and latterly as secretary of the new Medical Council of India, Sir Norman mentioned that Sir Robert Bolam's appointment at Durham brought the number of vice-chancellors at present on the Council to four, and then turned to the statistics of the profession.

"The number of medical students registered in England in 1935," he said, "was the second highest on record, 1363, 12 less than that of the peak year of 1919, and 269 more than last year. Scotland had five fewer at 719, and Ireland 11 fewer at 521. 1884 names were added to the Medical Register by registration in 1935. Deducting deaths and removals for other reasons, the net addition is 1057, 27 more than the average of the last 20 years, raising the total number of registered practitioners to 58,363, 867 more than last year."

The Medical Council of India, Sir Norman Walker continued, had applied for the recognition of the degrees of certain Indian universities. Up to 1920 the executive committee had accepted for registration the degrees and diplomas of the universities of Bombay, Calcutta, Lucknow (Allahabad), Madras, and the Punjab. In 1921, however, a questionnaire on the teaching of midwifery was addressed to these universities and the replies showed that this was not, save in Madras, of a standard which would be recognised for licensing bodies in this country. With the object of finding a solution of an admittedly difficulty question Sir Norman had accepted an invitation to proceed to India and to discuss the difficulties with the authorities there. In his report to the Secretary of State in 1922 he considered it possible for each of the universities to arrange that its regulations could be brought sufficiently into accordance with the resolutions and recommendations of the Council to enable the Council to continue to recognise its diplomas. He proposed that the services of Colonel R. A. Needham, deputy director-general of the Indian Medical Service, who accompanied him throughout his tour, should be accepted as those of inspector, and for four or five years Colonel Needham's careful and conscientious reports were the basis of the Council's continued recognition of the degrees. In 1926 Sir Norman again went to India to report on the progress that had been made, not only in the teaching of midwifery, but in regard to the subjects of medicine and surgery also, and found evidence of general improvement almost everywhere. In September, 1933, an Act was passed constituting a Medical Council of India, with a constitution on lines similar to that of the General Medical Council, and Mr. Farquhar Macrae became its first secretary.

"Now for the future: there are eight universities under the jurisdiction of the Medical Council of India which confer degrees—Andhra, Bombay, Calcutta, Lucknow, Madras, Patna, Punjab, and Rangoon. The reports of medical inspectors to the Indian Council on Bombay, Lucknow, and Patna were received just before the meeting of the executive committee in February, and that on Madras in March. These have been carefully considered by the executive committee, and they resolved yesterday that the degrees of M.B., B.S. granted by the universities of Bombay, Lucknow, and Madras (together with other qualifications granted by the universities of Bombay and Madras which were previously registrable) should again be recognised for registration if granted on or after Feb. 25th, 1930; and that the degrees of M.B., B.S. granted by the University of Patna should be recognised for registration if granted on or after May 11th, 1935."

The President announced that Wednesday and Thursday mornings would be devoted to discussion of the medical curriculum. The Council then proceeded to a consideration of penal cases.

PARLIAMENTARY INTELLIGENCE

MIDWIVES BILL IN COMMITTEE

ON May 21st and 26th the Midwives Bill was further considered by Standing Committee C. of the House of Commons.

Midwives' Salaries

Discussion continued on the amendment moved by Mr. E. DUNN providing that the salary of midwives employed under the Bill should in no case be less than that of health visitors employed by the authority, or working in the same area.

Mr. G. GRIFFITHS said that the Minister of Health should not leave it to voluntary organisations to fix the salary of midwives. Such a course would be very dangerous. The Minister through the local authorities should decide that the minimum salary for midwives should be at least equal to that of the health visitors.

Mr. LYONS appealed to the Minister to give an assurance that in the circular which he proposed to send to local authorities on this subject he would lay down a satisfactory minimum salary for midwives so as to ensure the best working of the system.

Mr. LEACH said that the Minister had made it clear that he proposed to put in his circular to local authorities the statement that in his judgment the status of midwives should be regarded as akin to that of health visitors. If that were the case he might just as well put it in the Bill by accepting the amendment. Over and over again in that committee reference had been made to the low pay of midwives, but no figures had yet been produced. Dr. Moore had told a conference in 1929 that the average income of midwives practising in Huddersfield, 39 in all, was £58 2*s*. 6*d*.; he was satisfied that the figure had not risen since. The Maternal Mortality Committee had said that good midwifery could never be self-supporting in working-class areas.

Sir KINGSLEY WOOD said that the difference between himself and those who supported this amendment was the difference between democracy and autocracy. Midwives were as much the servants of local authorities as health visitors, and if they were to maintain proper democratic government in this country they must trust local authorities to fix the remuneration of their own servants. Broadly

speaking the local authorities had fixed the salaries of health visitors at a satisfactory figure—there might be some exceptions—and he trusted they would do the same for midwives. If in any case it was found that midwives were not properly paid the Minister had the final power in his hand of withholding the Government grant.

The amendment was negatived by 23 votes to 15.

Mr. SILVERMAN moved an amendment providing that the proposals to be submitted to the Minister by local authorities should include the provision by the authority of sterilised maternity outfits in every case.—Sir KINGSLEY WOOD said that the local authorities already had power to provide such outfits.—The amendment was negatived.

L.C.C. and Borough Councils

Mr. KEELING moved an amendment providing that the L.C.C. should not employ midwives in the area of any metropolitan borough council unless the L.C.C. satisfied the Minister that it was impracticable to make efficient arrangements with such borough council either directly or through a voluntary organisation. The committee had rejected an amendment on behalf of the non-county provincial boroughs, but the case of the London boroughs for running midwifery services of their own was far stronger. A great part of the Minister's argument against the provincial boroughs was that they were so small. Could the Minister justify the anomaly whereby Wimbledon with a population of 60,000 was to have its own midwives, whereas the adjoining metropolitan borough of Wandsworth with a population of 360,000 was to be handed over to the L.C.C. ? Many of the London boroughs went far beyond the requirements of the Bill in providing gynæcologists and bacteriological services and there was proof of their efficiency in the fact that in both 1934 and 1935 the maternal mortality of London was little more than half what it was in the provinces. The L.C.C. had no experience of domiciliary work; it only dealt with cases in hospitals and other institutions. The borough councils were in a position to make arrangements with both the voluntary and municipal hospitals.

Sir KINGSLEY WOOD said he was afraid that if the amendment were carried it would make the difficulties of administration almost worse than if the borough councils were entrusted with all the duties under the Bill. The special position of London arose from the very large number of voluntary hospitals which had external midwifery services in the metropolitan area. In London there were 22 voluntary hospitals with external midwifery services and two of those hospitals actually served parts of seven boroughs and five others served parts of six boroughs. If the amendment were carried the L.C.C. would presumably have to make all the arrangements with the voluntary hospitals in London so far as the external midwifery work was concerned, and then the appointment of midwives was apparently to shift over to the borough councils. That would be a hopeless and impossible position.

Major HILLS said that the metropolitan boroughs had built up health services which were a model to the world. He pleaded for a unified service for the whole of health provided that the authority was large enough to give a substantial choice of midwives to the mother and had shown that it had the capacity to run a health service efficiently. He wanted to see more care given before and after the birth of the child. He could not see how the midwifery services in these boroughs were going to be made better by the L.C.C.

The amendment was negatived by 32 votes to 5.

Financial Provision

Mr. LEACH moved an amendment providing that a midwife employed by an authority in pursuance of this Act should be entitled to travelling expenses incurred in the discharge of her duties in accordance with the scale approved by the authority.—Mr. SHAKESPEARE said that every local authority naturally provided travelling expenses for all its servants and midwives would be included. He could give the hon. Member an assurance on that point.—Sir J. HASLAM said that he remembered the day when doctors generally went to their cases on bicycles. Now they nearly all had motor-cars and the result was that they arrived fresh and fit for their work. He thought it was desirable that midwives should also be encouraged to be fresh when they arrived at their cases.—The amendment was by leave withdrawn.

Mr. SHAKESPEARE secured agreement for an amendment giving power to the Minister to see that justice was done to old and infirm midwives by local authorities in respect of compensation for their practices.

Mr. FRANKEL raised the question of the grants to local authorities for midwifery services, and suggested that under the provisions of the Bill many authorities would be forced to go slow in the development of the work.—Mr. SHAKESPEARE said he thought that Mr. Frankel was unreasonably apprehensive. Local authorities were as keen as any member of the Government to see these services operating. When the Ministry of Health were negotiating with the local authorities the suggestion was made that they should block grant this service straight away, but the local authorities pointed out that they wanted a number of years to find out exactly what the service would cost before the service was stabilised in a block grant. Therefore it was arranged that for the third grant period—from April 1st, 1937, to March 31st, 1942—the grant should be an annual grant related to the new expenditure for each of the five years. He thought that the great bulk or all of the local authorities would be able within five years to get an efficient midwifery service running.

HOUSE OF COMMONS

WEDNESDAY, MAY 20TH

Pit Refuse and Public Health

Mr. KENNEDY asked the Secretary of State for Scotland if he was aware of the complaints regarding the deposit of refuse from the Lochhead Pit, Fifeshire, into a passing stream causing what was regarded as a menace to public health in the neighbourhood of East Wemyss; and if steps could be taken to abate the nuisance.—Colonel COLVILLE, Under-Secretary of State for Scotland, replied: I am informed that no refuse is deposited in the Den Burn from Lochhead Pit but that pit water is discharged into the burn. The county medical officer of health is satisfied that no danger to health is involved, and as water in the condition in which it is raised from the mine is exempt from the operation of the Rivers Pollution Prevention Acts my right hon. friend is unable to intervene. I am informed that flooding from the stream has recently occurred at East Wemyss and this matter is at present under the local authority's consideration.

Female Labour in Mines

Mr. HEPWORTH asked the Minister of Labour which countries had not ratified the covenant adopted by the International Labour Conference, 1935, prohibiting the employment of female manual workers on underground work in mines; and whether any such work was permitted in any part of the British Empire.—Lieut.-Colonel MUIRHEAD, Parliamentary Secretary to the Ministry of Labour, replied: So far as I am aware, no country except Cuba has yet ratified the draft convention prohibiting the employment of women on underground work in mines of all kinds, but I would point out that the period allowed by the Treaty of Peace within which States must bring draft conventions before the competent authority for legislation or other action has not yet expired. The intention of H.M. Government to ratify this convention was notified to Parliament in a Command Paper (No. 5141) laid last March. With regard to the second part of the question, the employment of women underground in mines is prohibited in the United Kingdom. I am advised that in the large majority of the non-self-governing Colonial dependencies where mines exist such employment is prohibited by law, and that in the very few territories where no legislation to this effect has been enacted women are not so employed.

THURSDAY, MAY 21ST

Inflammable Toys

Mr. LEACH asked the Home Secretary if he was yet in a position to introduce legislation for the prevention of injury and death due to the numerous everyday articles, particularly toys, on sale made of celluloid or other highly inflammable substance, which were purchased mostly by a public ignorant of the danger incurred.—Sir JOHN SIMON replied: I am afraid that this is a matter which it would be most difficult to deal with by legislation.

Vocational Training of Deaf Boys and Girls

Sir WILLIAM JENKINS asked the President of the Board of Education if he would take steps to educate and train deaf boys and girls to some suitable vocation and make it compulsory upon education authorities to equip all adults in some industry.—Mr. OLIVER STANLEY replied: Vocational training is given in special schools for the deaf to children under 16, and five vocational courses for deaf students over 16 are recognised by the Board. I am not at present satisfied that a sufficient case exists for making it compulsory for local education authorities to provide such training for deaf adults.

Public Assistance to Persons Over Sixty-Five

Mr. HERBERT WILLIAMS asked the Minister of Health what proportion of the persons, other than dependants, in recept of poor relief were over the age of 65.—Sir KINGSLEY WOOD replied: On Jan. 1st, 1936, the proportion of the total number of men and women in receipt of poor relief (excluding rate-aided patients in mental hospitals) who were over 65 years of age was 31 per cent. The figure for men and women, excluding dependent wives, is not available, but the corresponding proportion for men only was 34 per cent.

Housing of Aged Persons

Miss WARD asked the Minister of Health whether local authorities would qualify for subsidy under the Overcrowding Act by erecting special houses for old people and using the houses vacated by these persons for housing people for whom accommodation had to be provided as a result of the provisions of the Overcrowding Act.—Sir KINGSLEY WOOD replied: Exchequer subsidy would be available for houses built in the circumstances indicated by my hon. friend, if the conditions of the Act are otherwise satisfied. I referred to the desirability of building special houses for old people in a circular which I issued in October last.

MONDAY, MAY 25TH

The Case of Mr. Bunner

Mr. COCKS asked the Secretary of State for Foreign Affairs whether he could give the House any further information regarding the case of Mr. Bunner, the British subject who was arrested by the Italians at Dire Dawa.—Mr. EDEN replied: As my noble friend informed the House on Thursday last, as soon as press reports of Mr. Bunner's arrest reached London, a telegram was sent to His Majesty's Minister at Addis Ababa asking him to ascertain the facts. When on Saturday definite information reached me that Mr. Bunner was under arrest, H.M. Ambassador at Rome lost no time in taking up this case, on instructions from H.M. Government, with the Italian Government. I am happy to be able to state that I have now received a telegram from H.M. Consul at Harar stating that Mr. Bunner has now been freed, and that he was due to leave for the coast on the evening of May 23rd. I will circulate a detailed account of this case.

The following is the statement referred to: A telegram was sent by H.M. Consul at Harar to H.M. Minister at Addis Ababa on May 22nd and received in London from Sir Sidney Barton on May 24th. In this telegram H.M. Consul stated that Mr. Bunner was now free and was due to leave with the rest of the British ambulance by the next train, on May 23rd evening or Sunday morning. An order had been made for the value of the money seized to be returned to him in lira. Meanwhile, through the kind assistance of the French Consulate and the French doctors Renault and Martin, Mr. Bunner had started a series of antirabies injections with good serum, and Dr. Empey, the head of the British ambulance, was being given a sufficient quantity of serum to complete the course. The sequence of events appeared to have been as follows: Mr. Bunner had been denounced by one, Gabre Christos, who was said to be of Turkish birth but Ethiopian by naturalisation, as Captain Rudolph Brunner, an Austrian formerly employed with the Ethopian military forces in the Ogaden. This charge was supported by an Ethiopian boy, aged about 12, formerly a body servant to Vehip Pasha. In view of the above evidence, the Italian authorities interrogated Mr. Bunner during the evening of May 17th, and wishing to continue interrogation the following day, kept him in custody that night in a room which he described as an incinerator. Hearing that he might be shot before the Italian authorities discovered their mistake, he escaped during the night. This seemed to the Italian authorities to confirm his guilt. He was re-arrested on the evening of May 20th. When H.M. Consul saw him on the 21st he looked none the worse for his adventure. H.M. Consul secured his immediate release on his personal parole that he would produce him when required. He then joined the rest of the Ambulance, which had decided to remain until the affair was settled. This satisfactory outcome, which had been achieved by vigorous representations to the Italian authorities, was confirmed by telegram to Dire Dawas from General Fuizzi, commanding in Harar. Difficulties were accentuated by Mr. Bunner's ignorance of any language but English, the absence of his passport which had gone on to Jibuti, the military character of his rank and of the wording of the instructions found on him from his superiors in the Ambulance, and finally his attempted escape. Undoubtedly Mr. Bunner should not have been held under close arrest on the night of the 17th after H.M. Consul had once stood sponsor for him. But I understand that this was an act of inferior officials misled by statements of lying witnesses and by the production of the visiting card of Rudolph Brunner inscribed as Captain of the Ethiopian Army which Gabre Christos alleged Mr. Bunner had given him.

Service Recruits and Physical Unfitness

Mr. KENNEDY asked the Prime Minister the number of applicants for enlistment in the Army, Navy, and Air Force in England, Scotland, and Wales, respectively, who had been rejected on the ground of physical unfitness during the last 12 months; and how many of the intending recruits were unemployed at the date of their application for enlistment.—Mr. BALDWIN replied: The number of applicants from April 1st, 1935, to March 31st, 1936, who have been rejected on the grounds of physical unfitness are:—

	Army.	Navy.
England	18,765	18,212
Scotland	3,654	2,709
Wales	1,442	1,095
	23,861	22,016

Similar figures for the Royal Air Force are not available for the three countries separately, but the total number of such rejections was 8558, of whom 526 were examined in Belfast. As regards the last part of the question, I regret that the information is not available.

Town and Country Planning

Lieut.-Colonel MOORE asked the Minister of Health in what approximate percentage of cases in the last 12 months where an appeal was made to him under the Town and Country Planning Act, 1932, and the Town and Country Planning (General Interim Development) Order, 1933, a decision was given favourable to the local authority.—Sir KINGSLEY WOOD replied: The approximate percentage of interim development appeals dealt with during the 12 months ended April 30th, 1936, on which a decision was given favourable to the local authority was 34. In 49 per cent. agreement was reached between the parties or the appeals otherwise lapsed. In the remaining 17 per cent. the appeals were allowed.

Small-pox

Mr. LEACH asked the Minister of Health how many cases of small-pox had been discovered by the port

authorities of London, Liverpool, Bristol, and Cardiff on ships arriving at those ports during the last 20 years.—Sir KINGSLEY WOOD replied: The following are the Notifications of Small-pox in Port Sanitary Districts for the years 1916–35 inclusive:—

London	39	Bristol	2
Liverpool	30	Cardiff	4

TUESDAY, MAY 26TH

Maternal Mortality in Scotland

Mr. MATHERS asked the Secretary of State for Scotland if he was now in a position to make a statement with regard to legislation to deal with the problem of maternal mortality in Scotland.—Sir GODFREY COLLINS replied: I hope that it will be possible during the present session to secure the passage into law of a Scottish Bill dealing with this subject.

Influenza and the Common Cold

Mr. LEES-JONES asked the Secretary of State for War what experiments and/or investigations had been made on behalf of the War Office into the prevention and cure of the common cold and influenza within the last six years; and what success, if any, had attended them.—Mr. DUFF COOPER replied: Investigations have been undertaken in vaccine therapy and in prevention by extensive hygienic precautions, without, however, satisfactory evidence being obtained as to the efficacy of vaccines in relation to either influenza or the common cold. An inquiry now being conducted in collaboration with the Medical Research Council, however, gives hope of more promising results.

Royal Army Medical Corps Deficiency

Mr. DAY asked the Secretary of State for War the deficiency in the authorised establishment of the Royal Army Medical Corps; and whether he could give the reason for this shortage.—Mr. DUFF COOPER replied: The deficiency is 60 officers and 309 other ranks. As regards officers, the shortage, which is being temporarily met by the employment of 38 temporary commissioned officers and a number of civilian medical practitioners, is a considerable improvement on the deficiency of 97 which existed when the present conditions of service came into operation two years ago, and I have every reason to hope that it will be made good at no distant date. The reason for the shortage must, of course, be a matter of opinion, but in the case of other ranks, it is accentuated by a recent increase of 169 in the establishment.

Sale of "Prepared" Honey

Mr. PERKINS asked the Minister of Health whether he was aware that a commodity composed of a mixture of sugar and other ingredients, including a small proportion of honey, was being sold as honey; and whether he would take steps to protect the public from this deception.—Mr. SHAKESPEARE replied: My right hon. friend is aware that a substance which is not pure honey is sold under the name of "prepared honey" with a label indicating that it is a mixture. My right hon. friend has no power to take any action in the matter, but if the circumstances of the sale are such as to constitute an offence under the Food and Drugs (Adulteration) Act, the duty of enforcement rests on the local authorities, and it is also open to any person to take proceedings.

MEDICAL NEWS

University of Oxford

Dr. H. A. B. Whitelocke and Dr. A. S. MacNalty have been nominated for election to the board of the faculty of medicine in place of Dr. C. F. T. East and Dr. C. P. Symonds who are retiring.

University of London

Mr. Arthur Wormall, D.Sc., senior lecturer in biochemistry in the University of Leeds, has been appointed to the university chair of biochemistry tenable at St. Bartholomew's Hospital medical college, and Dr. W. F. Harper, lecturer in anatomy in the University of Aberdeen, to the university readership in anatomy tenable at London Hospital medical college.

Dr. Wormall was born in 1900 and educated at Leeds Modern School and the University of Leeds, where he graduated B.Sc. in 1921, his studies being interrupted by seven months' war service in 1918. He went on to take his M.Sc. in 1924 and his D.Sc. in 1930, while acting as demonstrator in biochemistry at the University. In 1926 he was appointed to a lectureship and in 1933 became senior lecturer. In June, 1928, he was granted a year's leave of absence, while holding a Rockefeller medical fellowship, to study the chemistry of immunology at the Rockefeller Institute for Medical Research, New York. In 1930 he was sent out to Uganda by the Colonial Office and carried out biochemical and immunological studies on sleeping-sickness. Dr. Wormall has contributed many articles to biochemical and bacteriological journals.

Dr. Harper, who is 35 years of age, was educated at St. Andrews, where he studied first in the faculty of science, obtaining his B.Sc. degree with first-class honours in 1923. After three years spent in research as holder of a grant from the Department of Scientific and Industrial Research and as a Carnegie scholar, he took his Ph.D. degree. In 1930 he graduated as M.B. St. And., with honours, and was awarded the Rutherford gold medal. In the same year he was appointed assistant in the department of anatomy, and in 1931 lecturer in regional anatomy at University College, Dundee. After taking his M.D with honours he moved in 1934 to Aberdeen to take up his present post. Among other subjects he has written on the vascularity of human cardiac valves and on Dupuytren's contraction in the thumb.

University of Leeds

Dr. Albert Hemingway has been appointed to the chair of physiology and Mr. L. R. Braithwaite to the chair of surgery.

Dr. Hemingway graduated B.Sc. with first-class honours in physiology at the University of Leeds in 1922, and took his M.B. in 1925. He has held the posts of demonstrator in the department of physiology at King's College, and senior assistant at University College, London. In 1927 he was appointed to his present post of lecturer in experimental physiology at the Welsh National School of Medicine, Cardiff. His published work is largely concerned with the kidney.

Mr. Braithwaite, who is at present clinical lecturer in surgery in the University, is a graduate of medicine of both Leeds and Manchester, and became a fellow of the Royal College of Surgeons of England in 1907. After qualification he held house appointments at the Leeds General Infirmary, to which he is now honorary surgeon. During the war he held a major's commission in the Royal Army Medical Corps. In 1923 he was Arris and Gale lecturer at the Royal College of Surgeons, and in 1933 he was elected a member of the council. He is the author of many papers on surgical subjects, especially on the pathology and surgery of the abdomen.

Society of Apothecaries of London

At recent examinations the following candidates were successful:—

Surgery.—H. O. Dole, Univ. of Manch.; R. C. H. Ensor, Queens Univ., Belf., and Guy's Hosp.; C. J. Robarts, Westminster Hosp.; and J. K. Sargentson, Univ. of Camb. and St. Mary's Hosp.

Medicine.—H. Bentovim, Univ. of Manch.; N. Bickford, Univ. of Camb. and Middlesex Hosp.; and M. Q. H. Siddiki, Univ. of Leeds.

Forensic Medicine.—H. Bentovim, Univ. of Manch.; and M. Q. H. Siddiki, Univ. of Leeds.

Midwifery.—F. C. E. Diamond, Univ. of Durh.; L. W. La Chard, St. George's Hosp.; M. V. Matthew, Univ. of Manch.; and J. S. Wood, Univ. of Liverp.

The following candidates, having completed the final examination, are granted the diploma of the society entitling them to practise medicine, surgery, and midwifery: H. Bentovim, H. O. Dole, R. C. H. Ensor, and M. Q. H. Siddiki.

A Scholarship in Sociology

The council of Bedford College for Women will award next month on the recommendation of the Lady Huggins committee a scholarship of the value of £70 for one year for study or research in some branch of sociology. The scholarship is open to women holding a university degree, preference being given to graduates who have taken honours in philosophy, psychology, economics, or sociology. It would give opportunity for a recently qualified medical woman to spend a year studying some subject common to medicine and social science, such as hospital administration or health on a new housing estate. The successful candidate will be expected to enter upon her work in October, 1936. Applications must reach the principal of Bedford College, Regent's Park, London, N.W.1, by June 6th.

National University of Ireland

At a meeting of the senate on May 21st it was decided that the hon. degree of D.Sc. should be conferred upon Dr. Simon Flexner, director of the Rockefeller Institute for Medical Research since its foundation.

Manchester Medical Society

At the annual meeting of this society on May 6th, Mr. Garnett Wright was elected president for the coming year. Dr. L. A. Parry gave an address summarised on p. 1276.

Research Scholarship in Tropical Medicine

The London School of Hygiene and Tropical Medicine invites applications for the Wandsworth scholarship which will be vacant from Oct. 1st. The scholar, who need not hold a medical qualification, will be required to devote his whole time to research in tropical medicine. Further information will be found in our advertisements columns.

A Tribute to Dr. Morax

On May 15th, at the end of the annual congress of the Société Française d'Ophtalmologie, a portrait of the late Dr. Victor Morax was unveiled at the Lariboisière Hospital. Speeches were made in his honour by Dr. Magitot, Dr. Coutela, Dr. Coppez, and others. Mr. A. F. MacCallan represented the Ophthalmological Society of the United Kingdom.

Medical Congress in Brussels

The Journées Médicales de Bruxelles will be held this year from June 20th to 24th under the presidency of Prof. Robert Danis. The opening address will be given by Dr. Maurice Bedel who will present a "petition to doctors in the name of the sick." The secretary of the congress is Dr. R. Beckers, 141, rue Belliard, Brussels.

Research Defence Society

The annual general meeting of this society will be held at the London School of Hygiene, Keppel-street, W.C., on Tuesday, June 9th, at 3 P.M., when Sir Malcolm Watson will deliver the tenth Stephen Paget memorial lecture. His lecture will be entitled Manson, Ross, and Reed, Pioneers in Research on Tropical Diseases.

Royal Infirmary, Edinburgh

Last week Lady Kinnaird, wife of the Lord High Commissioner, laid the foundation-stone of the new nurses' home at this hospital. The building is to be one of seven floors of fireproof construction. There are to be six stairways and four lifts, and gardens will be built on the roof. It will contain 278 bedrooms, each fitted with a wash-hand basin and built-in furniture. There will be one bath available for every five nurses, while shampoo rooms and pantries are to be arranged on each floor. A ward for sick nurses will accommodate 22 patients. The ground floor of the building is to be allocated entirely to recreation and sitting-rooms which, if necessary, can be converted into one room of 140 ft. in length for special functions.

International Organisation against Trachoma

A meeting was held in Paris on May 11th during the annual congress of the French Ophthalmological Society, when an introductory address was given by the president of the organisation, Mr. A. F. MacCallan, and papers on the treatment of trachoma in children were read by him, Dr. Wibaut (Holland), and Dr. Zachert (Poland). In the discussion which followed Dr. Ragazzi and Prof. Baslini (Italy), Dr. Joseph Jitta (League of Nations), Dr. Aubaret (France), Dr. Nataf (Tunisia), and Dr. Marin Amat (Spain) took part. Later on the same day there was a combined meeting of this organisation with the International Association for the Prevention of Blindness under the presidency of Prof. de Lapersonne, when Prof. Terrien read a paper on the classification of conjunctivitis, Dr. R. P. Wilson gave an account of conjunctivitis in Egypt, and Mr. MacCallan reported on the relationship between conjunctivitis and trachoma. The reports of Dr. Park Lewis (U.S.A.) and of Mr. Bishop Harman (London) were circulated. Copies of proceedings may be had from the International Association at 66, Boulevard Saint-Michel, Paris, 6e.

THE Spanish Government has conferred the decoration of Comendador de la Orden de la República upon Sir Henry Wellcome, F.R.S., founder of the Wellcome Research Institution, London.

University College Hospital

The King has consented to become the patron of this hospital, which since its foundation in 1833 has always been under the patronage of the reigning sovereign.

Liverpool School of Tropical Medicine

A four days' course of instruction in hygiene for non-medical people proceeding to the tropics will be held at the school from Tuesday, June 9th, to Friday, the 12th. Further particulars may be had from the laboratory secretary at the school.

Institute of Medical Psychology

An intensive short course, open only to registered medical practitioners, will be held in the evenings and on Saturday afternoons from June 15th to 27th at this institute. The lecturers will be Dr. Emanuel Miller, Dr. J. A. Hadfield, Dr. H. Crichton-Miller, Dr. H. V. Dicks, Dr. Laura Hutton, and Dr. William Nunan. The course is intended for those with some knowledge of elementary principles. Further information may be had from the educational secretary at the institute, Malet-place, W.C.1.

Royal Edinburgh Hospital for Sick Children

The annual report of this hospital shows that its work is still increasing. During 1935 3144 cases were treated in the wards and there were nearly 28,000 attendances at the out-patient department. There was also a considerable increase in the work carried out in the urological, radiological, massage, and sunlight departments. The ordinary expenditure for the year was £19,437, which was less than the ordinary income by £4590. Legacies and donations received during the year amounted to over £21,000.

Hospital Study Tour in Czechoslovakia

A tour has been organised by the International Hospital Association and the Association of Czechoslovakian Hospitals, from August 29th to Sept 15th, for those connected with hospital work and organisation. Among the towns to be visited are Carlsbad, Prague, Zlin, Brunn, and Moravská Ostrava. Visits will be paid to the Government Health Institute in Prague, the Masaryk Home in Krc, the Bata Hospital and Social Welfare Institution in Zlin, the tuberculosis department of the Municipal Hospital at Bulovka, and the sanatoriums of the high Tatra mountains. Further particulars may be obtained from the Czechoslovak Travel Bureau (Cedok), Ltd., 21, Regent-street, London, S.W.1.

Canadian Rheumatic Disease Association

An association with this name has been formed to study and control rheumatic diseases in Canada. It is a branch of the Ligue Internationale contre le Rheumatisme, and will coöperate with the Canadian Medical Association. At the inaugural meeting Dr. J. C. Meakins (Montreal) was elected hon. president, Dr. Almon A. Fletcher (Toronto) president, and Dr. W. S. Barnhart (Ottawa) secretary.

Testimonial to Dr. R. D. Clarkson

On May 22nd Dr. R. D. Clarkson, who has retired from the office of medical superintendent of the Royal Scottish National Institution, Larbert, was entertained to dinner in the Caledonian Hotel, Edinburgh. The Earl of Marr and Kellie, in proposing Dr. Clarkson's health, spoke of his record of strenuous, anxious, and successful work over 41 years. Dr. Clarkson, in replying, referred to the change since 1894 when interest in mental deficiency was confined to a very small number of religious and philanthropic people. Prof. D. K. Henderson said that the Institution had great traditions and had created confidence. It had become something bigger than an institution: it was a community with an organised society of doctors, nurses, teachers, and tradespeople all doing what they possibly could for the welfare of those in their charge.

A presentation was made to Dr. and Mrs. Clarkson in recognition of their service.

Australian and New Zealand Association for the Advancement of Science

A meeting of this association is to be held in Auckland, New Zealand, from Jan. 12th to 19th, 1937. Medical men who are likely to attend this meeting, and who wish to present papers to the section of medical science and national health, are asked to communicate with the sectional secretary, Dr. J. Egerton Caughey, 3, Alfred-street, Auckland, N.Z., at their earliest convenience.

Brazilian Society of Orthopædic Surgery

The first of the annual congresses that the new Sociedade Brasiliera de Orthopedia e Traumatologia intends to promote will be held in Sao Paulo, Brazil, at the beginning of June. Prof. Rezende Puech will preside, and Prof. Vittorio Putti will attend at the special invitation of the society. Subsequent congresses will take place in the different capitals of the Brazilian States.

Demonstrations of Contraceptive Technique

On Thursday, June 4th, at 2.30 P.M., at the clinic (106, Whitfield-street, W.) a practical demonstration of the technique of the use of a variety of contraceptive methods will be given by Mrs. Marie Stopes, D.Sc., and Dr. Evelyn Fisher. Application for tickets from medical practitioners and senior students should be made to the hon. secretary at the clinic.

Excursions to Russia

Dr. Stella Churchill is forming a party to visit Russia, leaving London on June 27th. The journey will be made by sea between London Bridge and Leningrad and arrangements will be made to visit in that city and in Moscow special centres of social and medical interest. In Leningrad the party will have an opportunity of inspecting the Pavlov, Yaffa, and Semenov Institutes, the Metchnikov Hospital, radiological and optical institutes, and creches with their playgrounds. In Moscow attention is drawn to the visits to be made to the abortion and birth control clinic, the institutes of nutrition, tropical research, and, especially, of genetics. Houses of correction, rest homes, and workers' clubs will also be open for inspection. The inclusive price to tourists of all necessary requirements from London back to London is set down at £36, though optional extensions at approximately £1 15*s.* per day can be arranged if notice is given before departure. Further particulars can be obtained from the Wayfarers Travel Agency Ltd., 33, Gordon-square, London, W.C.1.

A letter on p. 1261 announces arrangements made through the Society for Cultural Relations with Soviet Russia, 3, Bedford-place, London, W.C.1, for a study by medical men of Russian health services. The S.C.R. party starts a week earlier, but for most of the time the visits will be simultaneous.

Association of Industrial Medical Officers

The fourth meeting of this association was held in Birmingham at the end of last week. After the business meeting on May 22nd a paper on Labour Management and Medical Service, read by Dr. H. B. Trumper, a regional medical officer, I.C.I., was discussed by Prof. M. Culpin and Mr. R. Lloyd Roberts, chief labour officer, I.C.I., present as a guest. The importance of the industrial medical officer being in close contact with works management was emphasised. In the evening the association was entertained to dinner in the Midland Hotel by the directors of Imperial Chemical Industries Ltd., with Mr. J. Rogers in the chair. Amongst the guests were Dr. Stanley Barnes (dean of the Faculty of Medicine), Dr. M. W. Paterson, (hon. sec. of the Association of Certifying Factory Surgeons), Dr. E. R. A. Merewether (H.M. Medical Inspector of Factories), and Dr. Clyde McKenzie. The toast of "The Association" given by the chairman was replied to by Dr. N. Howard Mummery (J. Lyons and Co.) and Dr. L. P. Lockhart (Boots Pure Drug Co.). On May 23rd at I.C.I. Metals Limited, Witton, a discussion on the Treatment of Industrial Injuries was opened by Dr. Donald Stewart (I.C.I.) and Dr. Margaret Hossell (Rowntree's). Members of the association had the opportunity of seeing in detail much of the non-ferrous metal industry, the potential risks of injury, and the measures taken to safeguard health and welfare.

Royal Society of Tropical Medicine and Hygiene

The King has consented to become a patron of this society.

Orthopædic Clinics in Cornwall

The work of orthopædic clinics in this county is greatly on the increase. Six years ago only 90 cases were under treatment during a year; in 1935 the total was 1148, and 32 beds instead of 14 are to be reserved for this work at the Royal Cornwall Infirmary.

Society for Relief of Widows and Orphans of Medical Men

The annual general meeting of this society was held in London on May 20th with the president, Mr. V. Warren Low, in the chair. During the past year £4914 was distributed in grants to the widows and orphans of members. The grant to widows over sixty-five years of age was £75 each; to those under sixty-five £65, and to orphans £50 each. In addition a Christmas present of £15 was made to each widow over seventy-five, £10 to each widow under that age, and £10 to each orphan. On the last day of 1935 there were 51 widows and 8 orphans in receipt of grants, which by the constitution of the society are made only to the necessitous widows and orphans of deceased members. Special grants are made to orphans over the age of sixteen, at which age the ordinary grants cease, to enable them to study for some business or professional career. In 1935 a sum of £194 was distributed with this object. During the year 6 widows in receipt of grants had died; 1 of these had been on the funds for 15 years and received in grants £1210. Her husband on election had paid a life-subscription of £21. The total membership of the society is now 263. Membership is open to any registered medical practitioner who, at the time of his election, is resident within a 20-mile radius of Charing Cross. Admitted under thirty-five years of age the annual subscription is two guineas. Full particulars from the secretary of the society at 11, Chandos-street, London, W.1.

Births, Marriages, and Deaths

BIRTHS

BASSETT.—On May 21st, the wife of John Morics Bassett, M.D., F.R.C.S. Edin., of Cranley-gardens, London, S.W., of a son.

CLEGG.—On May 24th, the wife of Hugh Clegg, M.R.C.P., of 27, Lawn-road, N.W.3, of a son.

DAVISON.—On May 16th, to Grace Davison, M.B. Durh., the wife of Max Davison, M.B. Durh., of Dorking—a daughter.

FOSSEL.—On May 22nd, to Attie (née Joekes), wife of Dr. Max Fossel, of Graz, Austria—a son.

LEASK.—On May 14th, at Southampton, the wife of Dr. Norman H. Leask, of Southampton, of a son.

MOODY.—On May 12th, at Ilford, the wife of Dr. J. Arthur Moody, of a son.

SIMS.—On May 17th, at Exeter, the wife of Dr. Charles Sims, of a daughter.

THOMSON.—On May 21st, the wife of Dr. Robert Thomson, of New Cavendish-street, W., of a son.

MARRIAGES

DAWE—TURNER.—On May 14th, at St. Andrew's Church, Bath, J. H. Dawe, M.B. Edin., of Bath, to Rosanna, youngest daughter of the late Edward Turner of Greenwich.

SHUTTLEWORTH—CUSHING.—On May 9th, at Southwark Cathedral, Cyril William Thomas Shuttleworth, M.R.C.S., L.D.S., of New Eltham, to Yvonne Alicia Cushing, only daughter of Dr. and Mrs. Cushing of Bristol.

DEATHS

CAMPBELL.—On May 24th, at Walton-on-the-Hill, Tadworth, Surrey, Surgeon Lieut.-Col. William Campbell, late Grenadier Guards, aged 86.

DIGBY.—On May 19th, at Felixstowe, William Everard Sherard Digby, M.R.C.S. Eng., late West African Medical Service, and of Rushmere, Ipswich.

HEWETSON.—On May 19th, at Birmingham, John Thomas Hewetson, M.D., F.R.C.S., in his 64th year.

HUGHES.—On May 23rd, at Cookshill, Mundesley, Norfolk, Lieut.-Col. Thomas Arthur Hughes, M.D., Sc.D. Dub., F.R.C.P. Lond., I.M.S., aged 51.

JEANS.—On May 25th, at a London nursing-home, Alfred Norman George Jeans, M.R.C.S. Eng., of Holmfield-court, Belsize-grove, N.W., son of the late Sir Alexander Jeans of Liverpool.

MASON.—On May 17th, at 216, Braid-road, Edinburgh, Victor Harold Mason, M.C., M.B., Ch.B.

WORTHINGTON.—On May 17th, at Birchington, Kent, Harry Edward Worthington, M.R.C.S. Eng., aged 69.

N.B.—A fee of 7s. 6d. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Appointments

BECCLE, L. F., M.B. Lond., has been appointed Coroner for Romford.

WALDRON, F. R., M.D. N.U.I., D.P.H., Medical Officer of Health for Greenwich.

WALKER, D. G., M.B., B.Dent.Sc., Hon. Assistant Dental Surgeon to the Royal Dental Hospital of London.

Certifying Surgeons under the Factory and Workshop Acts: Dr. J. D. CRERAR (Tutbury District, Staffs); Dr. H. D. LANDER (Burnham-on-Crouch District, Essex, formerly known as Southminster); Dr. G. R. BURNETT (Keswick District, Cumberland); and Dr. R. A. NEILL (Middlewich District, Cheshire).

Vacancies

For further information refer to the advertisement columns

Albert Dock Hospital, Connaught-road, E.—Res. M.O. At rate of £110.

Ashton-under-Lyne District Infirmary.—Res. Surg. O. and H.S. At rate of £200 and £150 respectively.

Aylesbury, Royal Buckinghamshire Hospital.—Sen. Res. M.O. At rate of £200.

Barnsley, Beckett Hospital and Dispensary.—H.P. £200.

Bath, Royal United Hospital.—Hon. Asst. Gynæcologist and Obstetrician.

Battersea General Hospital, S.W.—H.P. and Cas. O. At rate of £120.

Bootle General Hospital.—H.S. or Cas. O. At rate of £150.

Bradford Royal Infirmary.—H.P. At rate of £135.

Brighton, Borough Infectious Disease Hospital and Sanatorium.—Sen. Res. M.O. £400.

Brighton, New Sussex Hospital for Women, Windlesham-road.—H.S. £100.

Bristol, Brentry Colony for Male Mental Defectives, Westbury-on-Trym.—Res. Med. Supt. £800.

Bristol Eye Hospital.—Jun. H.S. At rate of £100.

Bristol Royal Infirmary.—Medical and Surgical Registrars. Each £400. Also Sen. Res. M.O. £200.

Bristol, Southmead Municipal General Hospital.—Jun. Asst. Res. M.O. At rate of £200.

British Postgraduate Medical School, Ducane-road, W.—First Asst. to Obstet. and Gyn. Dept. £300.

Burnley, Municipal General Hospital.—Jun. Res. M.O. £150.

Cambridge, Addenbrooke's Hospital.—Res. Anæsthetist and Emergency Officer. At rate of £130.

Cardiff, University College of South Wales and Monmouthshire.—Lecturer in Experimental Physiology. £750.

City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.—Surg. and Med. Regs. £225 and £175 respectively. Also H.P. At rate of £100. Also Asst. Radiologist.

City of London Maternity Hospital, City-road, E.C.—Jun. Res. M.O. At rate of £80.

Connaught Hospital, Walthamstow, E.—Dental Clin. Assts. 1 guinea per session.

Coventry and Warwickshire Hospital.—Res. H.P. £160.

Derby, Derbyshire Royal Infirmary.—H.S. £150.

Dreadnought Hospital, Greenwich, S.E.—H.P. and H.S. Each at rate of £110.

Dunedin, N.Z., Otago Hospital.—Radiotherapist. £800.

East Ham Memorial Hospital, Shrewsbury-road, E.—H.S. to Spec. Depts. and Cas. O. At rate of £120. Also Hon. Ophth. Surgeon.

Eastern Dispensary, Leman-street, E.—Physician.

Great Yarmouth General Hospital.—H.S. £140.

Hammersmith Hospital, Ducane-road, W.—Asst. Radiologist. £700.

Hartlepools Hospital.—Second H.S. At rate of £150.

Holt, Norfolk, Kelling Sanatorium.—Second Asst. Res. M.O. £350.

Hospital for Sick Children, Great Ormond-street, W.C.—Ophth. Surgeon. Also Res. Aural Reg. £150.

Hospital for Tropical Diseases, Gordon-street, W.C.—H.P. At rate of £120.

Hull, Municipal Maternity Home and Infants' Hospital, Hedon-road.—Sen. Res. M.O. £450.

Hull Royal Infirmary.—H.S. to Ophth. and Ear, Nose, and Throat Dept. At rate of £150. Also H.S. to Sutton Branch Hospital. At rate of £160.

Ilford, King George Hospital.—Res. Cas. O. and Surg. Reg., Res. Med. Reg. Each £150. Two Res. H.S.'s. Each £100. Also Hon. Asst. Dermatologist.

Ipswich, East Suffolk and Ipswich Hospital.—H.S. £144.

Kettering and District General Hospital.—Second Res. M.O. At rate of £125.

Kidderminster and District General Hospital.—H.S. £150.

Leek, Cheddleton Mental Hospital.—Asst. M.O. £600.

Leicester City Mental Hospital, Humberstone.—Sen. Asst. M.O. £700. Also Third Asst. Res. M.O. £350.

Leyton Borough.—Deputy M.O.H. and Deputy School M.O. £660.

Liverpool Port Sanitary Authority.—Asst. Port M.O. £700.

Liverpool Royal Babies' Hospital.—Res. M.O. At rate of £90.

Liverpool Sanatorium, Delamere Forest, Frodsham.—Second Asst. to Med. Supt. £250.

Liverpool Stanley Hospital.—H.S. At rate of £100.

Liverpool University.—Supervisor of Dental Mechanics and Dental Prosthetics. £750.

Liverpool, Walton Hospital.—Second Sen. Res. Obstet. and Gyn. Officer. £350.

Llanelly and District General and Eye Hospital.—Res. Med. Supt. £300.

London County Council.—M.O. (Grade I.). £350. Asst. M.O.'s (Grade II.). Each £250. Also Temp. Dist. M.O. At rate of £235.

London Homœopathic Hospital, Great Ormond-street, W.C.—H.S. At rate of £100.

London School of Hygiene and Tropical Medicine, Keppel-street, W.C.—Wandsworth Scholarship. £350.

Maidstone, West Kent General Hospital.—H.S. £175.

Manchester, Ancoats Hospital.—Combined H.S. (Aural) and H.P. post. At rate of £100.

Manchester, Christie Hospital and Holt Radium Institute, Withington.—Res. Surg. O. At rate of £150.

Manchester, Crumpsall Hospital and Institution.—Jun. Asst. M.O. At rate of £200.

Manchester, St. Mary's Hospitals.—Four H.S.'s for Special Depts. Each at rate of £50.

Middlesbrough, North Riding Infirmary.—Third H.S. At rate of £125.

Mildmay Mission Hospital, Austin-street, E.—Asst. Cas. O. At rate of £125.

Monmouthshire County Council.—Asst. M.O. £500.

National Hospital for Diseases of the Nervous System, Queen-square, W.C.—Asst. Registrar. £200.

National Temperance Hospital, Hampstead-road, N.W.—Res. M.O. At rate of £175. Also Cas. O. and H.S. At rate of £120 and £100 respectively.

Norwich, Norfolk Mental Hospital.—Asst. M.O. £350.

Nottingham General Hospital.—H.S. At rate of £150.

Oldham County Borough.—Asst. M.O.H. and Asst. Tuber. Officer. £750.

Oldham Royal Infirmary.—H.S. At rate of £175.

Preston and County of Lancaster Royal Infirmary.—Cas. H.S. £150.

Princess Elizabeth of York Hospital for Children, Shadwell, E.—Cas. O., H.P., and H.S. Each at rate of £125.

Princess Louise Kensington Hospital for Children, St. Quintin-avenue, W.—H.S. At rate of £100.

Queen Charlotte's Maternity Hospital, Marylebone-road, N.W.—Res. Anæsthetist. At rate of £100. Res. Anæsthetist and Dist. Res. M.O. At rate of £90. Also Asst. Res. M.O. At rate of £80.

Queen Mary's Hospital for the East End, E.—Res. M.O. and two Cas. and Out-patients' Officers. Each at rate of £150. H.S.'s, H.P., Obstet. H.S., and Res. Anæsthetist and H.P. Each at rate of £120. Also Hon. Asst. Surgeon.

Queen's Hospital for Children, Hackney-road, E.—Psychiatrist.

Radium Beam Therapy Research, &c., 16, *Riding House-street, W.*—Asst. M.O. At rate of £250.

Reading, Royal Berkshire Hospital.—Hon. Asst. Anæsthetist.

Retford, Notts, Rampton State Institution for Mental Defectives.—Medical Officer. £515.

Rotherham County Borough.—Asst. M.O. £300.

Royal Chest Hospital, City-road, E.C.—Surgeon.

Royal Free Hospital, Gray's Inn-road, W.C.—Res. Cas. O. and Res. Anæsthetist. At rate of £150 and £75 respectively. Also Children's Third H.S.

Royal Northern Hospital, Holloway, N.—Hon. Radiologist.

St. Bartholomew's Hospital, E.C.—Asst. Physician to Children's Dept. Also Asst. Surgeon.

St. John's Hospital, Lewisham, S.E.—H.S. At rate of £100.

St. Mark's Hospital for Cancer, &c., City-road, E.C.—H.S. At rate of £65.

St. Peter's Hospital for Stone, &c., Henrietta-street, W.C.—Clin. Assts. to Hon. Staff.

Salford Royal Hospital.—Res. Surg. O. £200. Also two H.S.'s. Each at rate of £125.

Salvation Army Mothers' Hospital, Lower Clapton-road, E.—Hon. Obstet. Surgeon. Also Hon. Clin. Asst.

Shrewsbury, Royal Salop Infirmary.—Res. Surg. O. £250.

Southampton, Isolation Hospital and Sanatorium.—Jun. Res. M.O. £200.

Southampton, Royal South Hants and Southampton Hospital.—H.S. to Ear, Nose, and Throat Dept., and Res. Anæsthetist. At rate of £150.

South Eastern Hospital for Children, Sydenham, S.E.—Jun. Res. M.O. At rate of £100.

Southend-on-Sea General Hospital.—Med. Reg. and R.M.O. £300.

Southport General Infirmary.—Sen. and Jun. H.S.'s. £200 and £150 respectively.

Taunton and Somerset Hospital.—H.P. At rate of £100.

Truro, Royal Cornwall Infirmary.—Hon. Surgeon.

University of London, King's College, Strand, W.C.—Asst. Lecturer and Research Worker. £300.

Wadsley Mental Hospital, near Sheffield.—Sen. Asst. M.O. £650.

Wakefield Mental Hospital.—Asst. M.O. £350.

West Ham County Borough.—Asst. School M.O. £500.

West London Hospital, Hammersmith-road, W.—Res. Asst. Surgeon. £200. Med. Reg. to Children's Dept. £100. Also two H.S.'s, H.P., and Res. Cas. O. Each at rate of £100.

Westminster Hospital, Broad Sanctuary, S.W.—Two Radiologists.

Wolverhampton Royal Hospital.—H.P. and H.S. At rate of £125 and £100 respectively.

The Chief Inspector of Factories announces vacancies for Certifying Factory Surgeons at Duns (Berwick), Presteigh (Radnor), and Enfield (Middlesex).

LEWES VICTORIA HOSPITAL.—The nurses' home at this hospital, which has been erected at a cost of £4500, will shortly be ready for occupation. Six beds are to be added to each of the hospital's wards, and it is intended to provide more beds for paying patients. To complete this extension scheme a further sum of £3000 is needed.

NOTES, COMMENTS, AND ABSTRACTS

SOME PSYCHOLOGICAL FACTORS IN SICKNESS ABSENTEEISM *

BY THOMAS M. LING, B.M. Oxon., M.R.C.P. Lond.
MEDICAL OFFICER, JOSEPH LUCAS LTD., BIRMINGHAM

DURING the year 1934 the insured population of this country, approximately 14 million in number, lost roughly 28 million weeks in sickness, or an average of 14 days per person. Between 45 per cent. and 50 per cent. of these people were ill at one time or another during the year, and in some districts the proportion rises to 70 per cent. This loss falls in ever-widening circles on the individuals themselves, their families, society, and the industrial structure. During the same period the loss of time due to industrial disputes was only 10 per cent. of that due to sickness. The economic and moral loss eventuating to the nation from disputes is recognised by all thinking people, and the marked decline in these figures during the last decade may be regarded as a striking justification for the conciliatory steps that have been taken by all those concerned. If the far greater problem of sickness absenteeism is faced during the coming years with the same objective realism, there is no reason why results as valuable should not be obtained, but from the very nature of the problem, it is one where medicine must coöperate with the allied fields of sociology, economics, and psychology in a common effort. Quite apart from the urgency and perhaps the intangibility of the subject, the most striking feature is the reorientation demanded in our own viewpoints as practitioners of medicine. It is notorious that every age is one of change and it would seem that these changes are taking place around us at an ever-increasing speed. Modern industry, rationalisation, the aggregation of a large number of people earning their livings as members of a single unit, all bring in their trail new problems, with which we, as doctors, are intimately concerned. The relationship of people to their work, to the organisation by which they are employed, and to their associates in the organisation, whether above or below them, all play a highly significant part in the individual's mental contentment and his capacity to deal with "the slings and arrows of outrageous fortune," whether these be physical illness, domestic troubles, or the just reprimands of his superiors.

The great developments of public health have solved many of the pressing problems of physical disease that bore so heavily on the employed classes during the last century; typhoid fever, scurvy, and alcoholic cirrhosis are to-day clinical curiosities, thanks largely to improved education and the excellence of our various health services; tuberculosis has shown a most striking decline, due probably to improved nutrition and the various preventive measures that have been taken since Osler spoke of it so feelingly at the beginning of the century. Despite these improvements, for which our profession and the various lay organisations concerned can feel justifiable satisfaction, the sickness rates among the insured population are disquietingly high and the subject is now a major social problem pressing for solution.

Just as clinical diseases change, so must our viewpoint change to face the new situation that has arisen and evidence is rapidly accumulating to show that psychological factors are playing an increasingly prominent part and that no consideration of the subject is complete without an appreciation of the importance of this aspect.

The Old and the New Viewpoint

The emphasis placed on morbid anatomy and detectable structural changes during the last 50 years has overshadowed the aggravating emotional disharmonies that always coexist in cases of frank "organic" illness and that in many cases may so alter visceral functioning that the patient is partly or completely incapacitated from taking his place in a gregarious community. This emphasis on terminal changes and the attempt to deduce from them a clear picture of the living patient has resulted in what may be termed a "nosographical" method of diagnosis. The objective in such an approach is to place the patient in one or another medical pigeonhole. It consists, in other words, in the determination of a nosographical label, a label of one of the "diseases" to be applied to the patient; for example, duodenal ulcer or mitral stenosis or migraine. But the emphasis so placed on the organic and bacteriological method of diagnosis, which is still the predominant method utilised in contemporary medicine, has caused a serious misconception regarding disease and the methods to be used for its alleviation, especially among ambulatory patients. Those who see and appreciate only organic diseases, as a natural sequence, have divided individuals who seek advice for their health into those who are really ill—that is who show predominant morbid manifestations in an organ, or give evidence of a distinct infection with a particular micro-organism, and those who are not really ill—that is those in whom no organic manifestation and no infection can be found. These last individuals are classified as "functional" or "neurotic" and are in general dismissed either with smiling encouragement and the questionable piece of advice that there is really nothing the matter with them, or with an atmosphere of frank disapproval or contempt for not "pulling themselves together." Such an attitude is really indefensible from all points of view; a patient who feels ill *is* ill and is as worthy of all the help that we can give him, as the individual with the rare but dramatic disease manifesting itself as a tumour or an unusual association of cranial nerve palsies. To divide individuals into "organic" and "functional" must result in a form of therapeutic nihilism and it is only by considering and treating primarily the person's "dis-ease" and not the "disease" that we shall obtain the binocular vision required to see man as a whole.

It is perhaps insufficiently recognised that definite physical conditions can be brought about by a mental cause, although we all recognise that an emotion can make one feel very happy or make one depressed according to its implications. A persistent emotional disharmony can in addition cause headache, indigestion, and generalised autonomic spasm with all its attendant sequelæ. Thus Cannon,[1] in speaking of emotions and bodily changes, tells a story of a woman patient who had to come up to a city from the country to have a test-meal done, and after spending the night at her hotel went along in the early morning to the pathologist. The meal was withdrawn, but with it was returned the majority of her previous evening's dinner, quite undigested. The explanation for this was that the lady's husband, having come up to town with her, had unfortunately gone out on an alcoholic party that night. The test was repeated the following morning under happier domestic circumstances and the results were perfectly normal. This is a well-marked example of a morbid process that is found in many people, and that plays an unexpectedly important part in this whole question of sickness absenteeism and its relation to the vegetative neuroses.

It is admittedly very difficult to modify our earlier teaching, which has stressed the fact that morbid anatomical changes must always precede changes of function, while in reality the reaction is a reversible one. Actually the deciding factor adopted by the disciple of the "mechanistic" or Virchow School for deciding whether the individual is suffering from

* Paper read before the Association of Industrial Medical Officers at the London School of Hygiene and Tropical Medicine on March 27th, 1936.

an "organic" or "functional" condition, is the instrument he happens to use to record the abnormality of the organ under observation. Just at present the instrument on which most reliance is placed is the microscope with a limit of magnification of about twelve hundred diameters. Suppose that to-morrow some physicist invents a microscope with a much greater magnification. At once abnormalities may be seen where none was visible previously. But why confine ourselves to the microscope? Certainly there are other ways of recording abnormalities of the human organism besides visual observation of fixed and sectioned tissues. For example, the spectroscope may show us that a certain type of sugar is found in the urine of an athlete before a race. This is an observation which may be recorded photographically; it is a phenomenon which can be shown to occur regularly; by chemical methods the sugar may be estimated quantitatively. The average histopathologist, nevertheless, will maintain strenuously that there is no organic pathology in this anxious runner and that the disease is merely functional. What the pathologist really means is that after an autopsy on this athlete no lesion would be visible in stained sections of tissue with a microscope of the type in use in 1936. The impossibility of drawing a line between "organic" and "functional" is succinctly expressed by the German physician, Dr. Mohr [3]:—

"There is no such thing as a purely psychic illness or a purely physical one, but only a *living event* taking place in a living organism, which is itself alive only by virtue of the fact that in it psychic and somatic are united in an indissoluble unity."

Extent of the Psychoneuroses

This modern or Neo-Hippocratic approach has its immediate application to the problem of sickness absenteeism and its causative factors, as evidenced in the various reports published during the last few years by the Industrial Health Research Board. The attendant problems referred to in these publications throw into relief the complexity of the subject. What is a "normal" sickness rate? When does a person cease to be sick and become disabled? To what extent do local economic and sociological factors influence the situation? To all these questions, and to many more, the answers are as yet not clear; inter alia the policy of individual firms to their sick employees obviously plays a big part. If a company readily dismisses its sick workers, it will have an apparently low rate that will not be statistically comparable with those of a firm with a more developed social viewpoint. Despite all these variables, the predominant factors influencing the sickness rates are primarily emotional in origin. Thus in the twelfth annual report of the Board the following summary is given:—

"Although it has not been found possible as yet to isolate in particular cases the causative factors in sickness absenteeism, there is evidence to support the hypothesis that a high rate may be expected where the following occur: (1) rigidity of conditions; (2) routine work offering few prospects of promotion; (3) clerical as against productive or organising work; (4) badly selected departmental heads; (5) anomalies of payment."

As part of these investigations, Prof. Culpin and Dr. May Smith [3] interviewed over a thousand people of both sexes, in Government offices and commercial firms, factory operatives, people in administrative posts, and students, to ascertain the extent of nervous symptoms among the working population. The value of this investigation is obvious, as it is impossible to generalise about "sick" people until reliable information is available regarding our so-called normal population. Actually they found that some 30 per cent. of these workers showed varying degrees of psychoneurotic symptoms, while some 7 per cent. were in urgent need of suitable treatment for conditions that were crippling their effectiveness in the ordinary business of life. In addition, as they point out, "there is a tendency for the nervous people to have more sick leave, not necessarily diagnosed as nervous."

The following quotation shows the main outlines of the interviewing technique used:—

"Information with regard to these various attitudes to life was sought from each subject in an interview lasting about 20 minutes. A rigid questionnaire was not used, for the variety of symptoms and their mode of expression is infinite. As the work progressed, however, a general scheme was evolved by which the subject was led through various hypothetical situations that would stimulate the symptoms most commonly encountered. If a subject talked easily he was allowed to follow his own path, questions being interpolated either when he had stopped or when some point required elucidation."

By the use of this method and by inquiring about the individual's reaction to his work, those in authority over him, and his reaction to himself, it was found possible to form a fair estimate of his personality and the degree of neurotic qualities that he showed. Of the 30 per cent. who manifested clinical evidence of neuroticism, the majority were anxiety states, while approximately 12 per cent. were predominantly of the obsessional type; by virtue of the fact that only those actually in a fit condition to be employed were interviewed, frank cases of conversion hysteria were not observed.

Manifestations of the Anxiety State

An anxiety state is generally regarded as a manifestation of underlying fear or worry, and is liable to occur when an individual is confronted with difficulties and is unable to meet them in an appropriate adult fashion. It is often fortuitous whether the predominant symptoms are cardiac, gastro-intestinal, genito-urinary, or respiratory; further inquiry in such cases will always elicit evidence of generalised dysfunction, although the conscious disturbance may vary in different parts. As Cannon [1] has emphasised, the whole digestive process, which is under the influence of the sympathetic system, may be profoundly deranged by anxiety and distress, with the minor aspects of fear. The natural processes of the alimentary tract are fundamental to all other functions of the body and any disturbance of normal peristalsis, segmentalism, and secretion of the digestive fluids may have widespread ill-effects on the organism. The cardiac system, like the digestive system, is under the influence of the sympathetic nerves, but instead of being inhibited it is stimulated by them. The same sense of fear which stops digestion makes the heart beat more rapidly and raises the blood pressure by contracting the blood-vessels. In this connexion it is of interest that Sir Maurice Cassidy [11] has recently stated that 39 per cent. of the cardiac cases coming under his observation are essentially psychoneurotic in origin. This process of fear is essentially subconscious but the appearance of the physical manifestations permits the mind to neglect the distasteful situation that provoked the symptoms and to concentrate on the outward manifestations that are apparently evidences of underlying illness and, therefore, honourable. The process is strictly comparable to the development of shell-shock during the war among men who were unable to face the continued anxiety associated with the conflicting calls of duty and self-preservation.

Now difficulties are universal while neurotic reactions are fairly uncommon; individuals who fall into the latter category have, due to faulty emotional developments in their early years, acquired the habit of fleeing from their problems rather than of facing and solving them, so that when a particularly difficult situation arises "breakdown" occurs. It follows from this that the main difficulty may arise in any aspect of the individual's life—e.g., in his home, his social relationships, or in his occupation—although it is found in such cases that the adjustment to all these situations tends to rest on a false basis. Under modern economic conditions, with the development of large organisations and the associated likelihood

of personal anonymity, there is an increasing tendency to project the blame for personal disharmony on to the occupation and its concomitant associations, although in my experience the aggravating factors are to be found as often in the home as in the factory or office. It is perhaps not generally realised that physical conditions of employment, at any rate in the more prosperous industries, are improving every year in this country, and I feel that we, as members of this Association and representing the more progressive industries in the country, are entitled to claim some credit for these changes. On the other hand, the breakdown of family ties, the changes in religious influence, and the planless growth of anonymous "housing estates" all bring in their trail problems that throw increasing strain on the mental equanimity of our younger population.

Diagnosis of an Anxiety State

It follows from what has been said that a searching anamnesis is indicated which will consider in their true perspective social, occupational, and environmental relationships and the reaction of the individual to his life's situation. Thus inquiries regarding the individual's enjoyment of his work, his reaction to authority, his social contacts, and his reaction to noise, will in a comparatively short while bring to light valuable information for obtaining some insight into the patient's emotional patterns. Such questions cannot be asked pedagogically but are used rather to help him to express himself about significant matters. Elton Mayo,[5] who has recently carried out a most valuable investigation into sources of content and discontent in industrial life, has emphasised the way in which some individuals will pick on one particular problem and in their very insistence on the subject, show its significance in their minds. A complete and painstaking physical examination is as essential here as in all other aspects of medicine, and even when completely "negative" has a comparative therapeutic value as fears of various diseases are a common part of the anxiety state. As a rule the death of a relative from a particular disease will cause the patient to concentrate his attention on the "dis-ease" in the corresponding system in himself. In such cases, as Ross [6] points out, dogmatism is essential and permits of the sympathetic causation being explained to the patient as a necessary preliminary before the emotional factors are discussed.

These various factors are shown very clearly in the following case:—

A typist, aged 25, was seen on account of prolonged absence due to "dyspepsia." Family history negative and childhood free from gross disturbances apart from "night terrors" and somnambulism. In June, 1934, she was absent for two weeks on account of "abdominal rheumatism"; she returned for three days and then changed her doctor, who stated that she had a chronic appendicitis, for which an operation was performed. Microscopic examination of the appendix was negative. She started work again after eleven weeks' convalescence and continued for four months complaining frequently to her supervisor of "indigestion" and "heart burn." In March, 1935, she was absent for a week with "colitis" and again in September, 1935, with "gastritis." She was then seen by a consultant who said it was only "nerves" and she had got to pull herself together. She became much worse after trying to perform this impossible gymnastic feat and when seen in October she was living on peptonised milk and complained of a continued sense of fullness, constipation, nausea, headache, palpitation, and inability to concentrate. As a result of these various symptoms she was convinced that she must have either an ulcer or a new growth. Physical examination was completely negative, except for hyperæsthesia and tenderness over the appendix scar, and evidence of sympathetic over-action in the form of tâche cérébrale and dilated pupils. A complete anamnesis revealed the fact that she had been unofficially engaged for eighteen months to a young engineer with an invalid and somewhat possessive mother, but that the question of eventual marriage was never referred to by his family. An explanation of the method of production of symptoms was given to the patient and the implications of the situation were discussed with the young man. Two days later the girl felt well enough to return to work, the engagement was "officially" recognised, and since that time the patient has not lost a single day, although she still gets occasional palpitation. In addition her supervisor states that she is now "a totally different girl and a really good worker again."

Such a case is essentially a problem in social medicine and illustrates very clearly the way in which anxiety over extrinsic matters, either conscious or subconscious, may manifest itself physically by generalised disturbance of all systems under the influence of the autonomic system. To deal with the somatic symptoms without investigating the causal psychic factors only tends to convince the patient that there must be some obscure disease to cause so much discomfort.

REFERENCES

1. Cannon, W. B.: Bodily Changes in Pain, Hunger, Fear, and Rage, Boston, p. 17.
2. Mohr, Fritz: Klin. Woch., 1927, vi., 772.
3. Culpin, M., and Smith, M.: The Nervous Temperament, Report No. 61, Industrial Health Research Board, 1930.
4. Howe, E. G.: Motives and Mechanisms of the Mind, London, 1932.
5. Mayo, E.: Human Problems of an Industrial Civilisation, Philadelphia, 1932.
6. Ross, T. A.: The Common Neuroses, London, 1923, p. 69.

(*To be concluded*)

THE DOCTOR AS DETECTIVE

Dr. L. A. PARRY, of Brighton, took this title for an address delivered at the annual meeting of the Manchester Medical Society on May 6th. His theme was the value of medico-legal and scientific evidence in the detection of crime, especially major crime such as murder. As an example he referred to the FOX case where at the inquest a verdict of death from suffocation by smoke was returned. As the result of suspicions aroused by some remarkable insurance transactions, a further examination was made on the exhumed body of the murdered woman. It was found that there were no sooty particles in the larynx and no carbon monoxide in the blood, both of which should have been present if the cause of death had been suffocation. But there was evidence of death from strangulation. The doctor, acting as a detective, was the means of securing the conviction of a very brutal matricide.

The growth of toxicology was illustrated by three cases—the trials of Mary Blandy in 1752, of Dr. Smethurst in 1859, and of Dr. Crippen in 1910. In the first case, one of the earliest if not the first in which medical evidence was given in a poison trial, Dr. Addington testified to analysing some of the powder which had caused the death of Mr. Blandy, and finding arsenic. No examination of the viscera was made. In the Smethurst case it was pointed out that Dr. Swayne Taylor, the celebrated toxicologist, had at the police-court sworn he had found arsenic in a bottle from the house of the accused. Later he acknowledged the arsenic was contained in the copper gauze he had used for his test. In spite of this terrible blunder, Smethurst was convicted, but afterwards pardoned because of a united outcry of the medical and legal professions in London. In the Crippen case the medical evidence was immensely important, first as regards a mark on the piece of flesh found buried in Crippen's cellar, and secondly through analysis of the viscera found there. The prosecution called evidence that the mark on the piece of flesh was a scar, and as the woman Crippen was charged with murdering had a scar in an identical position, the significance of the mark was of vital importance. For the defence it was contended that the mark was not a scar but simply a fold in the skin, and in support of this claim evidence was given that in microscopic sections a few hair follicles and sebaceous glands were seen. The prosecution rebutted

this, and said that often a small fragment of epidermis was included in a scar, and this would account for the appearances noted. There was no doubt that the mark was a scar. In analysis of the viscera, Dr. Willcox had found a vegetable alkaloid which dilated the pupil. He could exclude cocaine, and that left only three other possibilities, atropine, hyoscyamine, and hyoscine. By differential tests he proved it to be hyoscine. Crippen had purchased five grains of this drug at a chemist's and could not account for its use. The defence claimed that Dr. Willcox had not proved he had found hyoscine. The substance might be a cadaveric alkaloid produced by decomposition. Dr. Willcox said he had employed Vitali's test which differentiated between vegetable and cadaveric alkaloids, and this test was conclusive. A text-book by the doctor appearing for the defence was produced, in which he stated that he regarded Vitali's test as accurate. Why had he altered his opinion? He replied that he had looked further into the matter and had in connexion with this case come to the conclusion that his first view was wrong. This statement necessarily reduced the weight attached to his opinion. Crippen was found guilty and was hanged.

Dr. Parry also referred to the value of the evidence of the doctor in many other cases, such as those in which wounds and injuries of all kinds were inflicted, in workmen's compensation cases, and in the detection of blood stains. In conclusion, he contended that the scientific witness was at least keeping pace with the ingenuity of criminals, and was a potent factor in bringing home guilt to the offender.

DESIGN IN NEW BUILDING

THE Minister of Health recently received a deputation organised by the Royal Institute of British Architects on the employment of architects on public building works. The object of the deputation, which was introduced by Lord Crawford, was to request the Minister to bring his influence to bear on local authorities in order to ensure that the large and increasing amount of housing and other building work undertaken by local authorities should be designed and supervised by fully qualified architects.

Sir Raymond Unwin said they were putting forward no suggestion that architects should displace engineers, surveyors, or other men qualified for different branches of work when employed in their proper spheres; the architect was however specially trained in design and planning. In the work to which they were referring there was no conflict between use or efficiency and good appearance; just as in any written statement, there was no conflict between accuracy of fact or soundness of sense and clearness of charm, in the form of expression. The designer, or planner, saw both ends together, but sought to provide for useful purposes in a form which would be orderly, pleasing, or beautiful; all were inextricably bound together. There was in this country a great variety of local conditions, local building materials, and local treasures of ancient buildings erected according to them. This was a national possession, which neither individuals nor local authorities had any right needlessly to destroy. It could only be guarded by the employment of those who had given years of study to the problems of planning and design, which included the satisfying of all practical requirements in a manner that harmonised with the surroundings. They appealed to the Minister to use all the influence at his disposal to secure this end.

Lord Crawford reminded the Minister that in matters affecting the health of the community he always insisted that the best men available should be employed; it was, he said, becoming vitally important that only the best architectural skill obtainable should be utilised on matters of planning and design.

In reply, Sir Kingsley Wood said he fully recognised the desirability of employing professional architects over as wide a field as possible. He was glad to say that local authorities were more and more employing architects and architectural assistants as permanent officers on their staffs. The architect was, in fact, more and more taking his proper place in combination with the engineer, the surveyor, the doctor, and the housing director in house building. The deputation could rely upon him to use his best offices to secure within the limits of local government good design and good planning. In a circular he was about to address to the local authorities in regard to rehousing for the abatement of overcrowding, he proposed to stress again the desirability of employing skilled architects for designing cottages in rural districts with a view to securing harmonious development. In default of employing an architect, the authorities would be invited to confer with the architect's department of the Ministry at the earliest stages.

NEW PREPARATIONS

"NEOKET" COMPOUND MANDELIC ACID GRANULES.—The successful use of mandelic acid in urinary infections depends on keeping the urine acid, and this can be done with ammonium chloride. The objection to ammonium chloride is that it often causes nausea, and in Neoket the Boots Pure Drug Co. Ltd. (Nottingham) replace it by sodium acid phosphate. Their preparation consists of pleasantly flavoured, effervescent granules sweetened with saccharin and containing mandelic acid and sodium acid phosphate, with enough sodium bicarbonate to neutralise the mandelic acid. According to the manufacturers it causes no alimentary upset, and usually makes the urine sterile in 8–10 days; but a little ammonium chloride sometimes has to be taken in addition during the first few days if sufficient acidity is not attained. The dose recommended for adults is two teaspoonfuls (45 grains) four times daily. Fluid intake is limited to a couple of pints a day, and mandelic acid treatment, it is emphasised, should not be given if renal function is impaired.

IMMUNE GLOBULIN (Human) is prepared by Lederle Laboratories, New York, for use as an alternative to "convalescent" or "adult" serum in the prevention, modification, and treatment of measles. They quote observations showing that extract derived from a placenta has the same protective power as the blood of the mother, and since their Immune Globulin extracts are obtained from about 600 placentas the antibody content should be uniform. For prevention of measles it is advised that at least 4 c.cm. should be given; for modification 2 c.cm. is to be injected as soon as a child is known to have been exposed to infection. The injections are intragluteal, and in a small proportion of cases give rise to mild local and febrile reactions. It is stated however that these are rarely produced by the improved preparation now marketed, which is obtainable in this country (in vials of 2 and 10 c.cm.) from Chas. F. Thackray Ltd., Gt. George-street, Leeds, 1.

LYSANTOL, a new fluid antiseptic made by Allen and Hanburys Ltd., London, E.2, is described as "non-corrosive, non-poisonous, and harmless to the skin," though much more powerful than carbolic acid. (Rideal-Walker coefficient, 4.) It has a pleasant smell, leaves no stain, and is miscible with water forming a translucent solution free from scum. It can be applied to wounds without dilution, but for cleansing cuts and abrasions, or for application to insect bites and stings, a tablespoonful in half a pint of water is recommended. In weaker mixtures it serves as a disinfectant appropriate to many surgical and domestic purposes.

A POCKET CAUSTIC HOLDER.—Johnson and Sons (Hendon Way, London, N.W.4) have devised a convenient method of carrying and applying silver nitrate pencils. The Argentic Caustic Holder resembles a small fountain pen; it is neat and compact, and is fitted with a pocket clip. The nitrate pencils

are supplied in glass tubes, each already mounted in a milled cap, which can be screwed into the holder, where it is firmly held until a refill is needed. They are ordinarily made according to the B.P. formula, but other types are also obtainable.

SPOTLIGHT GOLF

MANY doctors play golf and some play extraordinarily well, though it is quite likely that those get no more amusement out of the sport than the less accomplished exponents. But for all golfers an invention which enables the game to be played indoors will have an interest, and remembering the encroachments upon the time of the medical practitioner, the new invention styled Spotlight Golf may have particular attraction. The invention consists of an electrical apparatus, the motor detector box, to which is attached the ball, while the striker takes up his position a few feet from a screen. The result of any stroke becomes revealed; it is possible to know whether the ball has been truly struck or not, a matter which in the normal game it is only easy to detect at the end of the flight. A record of all shots played with a full set of ordinary clubs is made. The face of the cabinet shows the picture of the hole which is to be played. The length of the shot is indicated along the side of the hole by means of an arrow travelling the number of yards marked which the ball would have reached if played on an actual golf course, and its position is shown within the limits of the fairway by means of a "spotlight"—one player being red and the other white. There are various key lights, and the player whose correct turn it is to play is shown by red or green at the foot of the cabinet. A shot played wide of the fairway is shown by a blue light which calls for another shot by that player. Should the ball finish in a bunker the depth in feet is indicated, and it is only by playing a sufficiently lofted shot that the ball can be properly played out; if this is not done the ball, indicated by a light, remains in the bunker and the player has to continue to play until out of the bunker and until he passes his opponent's ball. The shots being accurately recorded a true picture is obtained of an actual game as played on a natural course.

We congratulate the inventor, Mr. L. J. Simon, on a very ingenious apparatus which is made by the Electrical and Musical Industries, Ltd., 185, Regent-street, London. It seems that there might be a medical use for the invention in providing suitable patients with interesting indoor exercise.

ILLICIT TRAFFIC IN DANGEROUS DRUGS

THE League of Nations Advisory Committee on Dangerous Drugs have recently had before them a report on illicit transactions and seizures during the first quarter of this year. Clandestine manufactories of narcotics have been discovered in Hong-Kong and Shanghai. In the international settlement in Shanghai it was found that 682 grammes of heroin had been manufactured in three days at a clandestine factory, and a complete laboratory equipment with chemicals was handed over to the Japanese consular police. One of the Chinese persons implicated was sentenced to six years' imprisonment.

Some 30 seizures of raw opium from China, Port Said, and some European and American ports were made; the largest consignment, which was confiscated and destroyed, amounting to 2418 kg., was at Wuhu, China. Prepared opium, mostly in small quantities in the Far East or in America, was reported as having been seized in 29 cases. Last year no less than 10,885 kg. of prepared opium and dross were reported to the secretariat of the League as having been seized. Of morphine ten seizures were reported in the first quarter of this year; the largest amounts were captured at Batavia, Manila, and at Portland, Oregon. Eighteen seizures of heroin were effected, the largest, amounting to more than 6 kg., being at Shanghai. Of cocaine there were sixteen seizures, the largest, of more than 12 kg., was at Prague on the information of the Government of Czechoslovakia.

The Advisory Committee has been considering the practicability of adopting more drastic measures for the prevention of illicit traffic in dangerous drugs on ocean-going vessels; and the coöperation of seamen's unions for the same purpose was advocated. A report from the secretariat giving estimates of the number of addicts in various countries was withdrawn for further consideration.

CORRIGENDUM.—The method of describing hearing aids for the deaf is stated in the notice which appeared on our advertisement page 2 of May 23rd to be covered by British Patent No. 576986. The number should have been given as 376986.

Medical Diary

Information to be included in this column should reach us in proper form on Tuesday, and cannot appear if it reaches us later than the first post on Wednesday morning.

SOCIETIES

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.
WEDNESDAY, June 3rd.
Surgery. 3 P.M. Laboratory Meeting at the Buckston Browne Surgical Research Farm, Downe, Kent.
THURSDAY, FRIDAY, and SATURDAY.
Laryngology and Otology.
June 4th, 3.30 P.M. Cases and Specimens. 4.30–6 P.M. Discussion. 7–7.45 P.M. Pathological Demonstration by Col. Hamerton at the Zoological Gardens, Regent's Park, N.W.
June 5th. 10.30 A.M. Mr. I. A. Tumarkin: Facial Paralysis. Mr. G. H. Steele: Technique of the Ballance-Duel Operation for Facial Palsy (film). Dr. Douglas Guthrie and Mr. Gavin Livingstone: Intratympanic Medication with Special Reference to Thyroxine. 2.30 P.M. Mr. Andrew Campbell: Two Cases of Laryngostomy. Mr. A. Lowndes Yates: Invisible Scars in External Operation on Frontal and Ethmoidal Sinuses. Mr. W. S. Thacker-Neville: Radical Treatment of Peritonsillar Abscess. 5 P.M. Prof. G. Ohngren, (Stockholm), Mr. E. Musgrave Woodman, and Mr. Norman Patterson: Malignant Disease of the Upper Jaw. (Cases and specimens at 4 P.M.)

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.
THURSDAY, June 4th.—8.30 P.M. (Kensington Town Hall) Prof. William Wright: The Princes in the Tower. (Cavendish Lecture.)

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MEDICAL ASSOCIATION OF THE INTERNATIONAL CLINIC.
FRIDAY, June 5th.—5 P.M. (Wigmore Hall, Wigmore-street, W.), Prof. and Mme. Joliot-Curie: The Synthesis of New Radio-active Elements.

BRITISH POSTGRADUATE MEDICAL SCHOOL, Ducane-road, W.
WEDNESDAY, June 3rd.—Noon, clinical and pathological conference (medical). 2.30 P.M., clinical and pathological conference (surgical).
THURSDAY.—2 P.M., Dr. Chassar Moir: Operative Obstetrics. 2.30 P.M., Sir Henry Gauvain: Surgical Tuberculosis. 3 P.M., Dr. R. A. Young: Non-tuberculous Pulmonary Diseases.
FRIDAY.—2.15 P.M., Dr. A. A. Davis: Gynæcological Pathology.
Daily, 10 A.M. to 4 P.M., medical clinics, surgical clinics or operations, obstetrical and gynæcological clinics or operations.

SOUTH-WEST LONDON POST-GRADUATE ASSOCIATION.
WEDNESDAY, June 3rd.—4 P.M., Visit to International Clinic, Sherwood Park, Tunbridge Wells.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION, 1, Wimpole-street, W.
MONDAY, June 1st, to SUNDAY, June 7th.—MAUDSLEY HOSPITAL, Denmark Hill, S.E. Afternoon course in psychological medicine.—LONDON LOCK HOSPITAL, 91, Dean-street, W. Afternoon course in venereal diseases (open to non-members).—PRINCE OF WALES'S GENERAL HOSPITAL, Tottenham, N. Sat. and Sun., course in general medicine.—Courses are open only to members of the fellowship.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, W.C.
WEDNESDAY, June 3rd.—2 P.M., Dr. B. E. Schlesinger: Bilious Attacks and Cyclical Vomiting. 3 P.M., Dr. A. Signy: Foci of Infection in the Intestinal Tract.
Out-patient clinics daily at 10 A.M. and ward visits at 2 P.M.

UNIVERSITY OF BIRMINGHAM.
FRIDAY, June 5th.—3.30 P.M. (Queen's Hospital), Dr. O. Brenner: Interrelations of the Heart and Lungs in Disease.

ANCOATS HOSPITAL, MANCHESTER.
THURSDAY, June 4th.—4.15 P.M., Dr. W. J. S. Reid: Anxiety States.